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DEPT FILE NO.
ISSUE DATE 7 August 1978
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SUPERSEDING
DATE

QUALIFICATION TEST
AND
FINAL PROGRAM REPORT

Volume 1

Section 2

FOR

SAFETY AND ARMING DEVICE
MSFC PN 10A00465
TMc/S PN 816780

FOR

SPACE SHUTTLE SOLID ROCKET BOOSTER

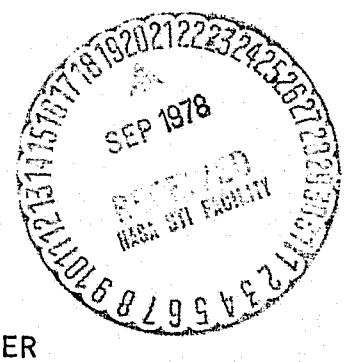
(NASA-CR-150792) QUALIFICATION TEST FOR SAFETY AND ARMING DEVICE MSFC PN 10A00465 TMc/S PN 816780 FOR SPACE SHUTTLE SOLID ROCKET BOOSTER, VOLUME 1, SECTION 2 Final (Teledyne/McCormick Selph, Hollister, G3/20

N78-31160

Unclas 29135

PROGRAM PERFORMED BY

TELEDYNE MCCORMICK SELPH
HOLLISTER, CALIFORNIA



TEST AUTHORIZED BY

GEORGE C. MARSHALL SPACE FLIGHT CENTER
MARSHALL SPACE FLIGHT CENTER, ALABAMA

Teledyne McCormick Selph

3601 UNION ROAD, HOLLISTER, CALIFORNIA 95023

CODE IDENT. NO. 06331

1252

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TOTAL NUMBER OF PAGES - 128

QUALIFICATION TEST REPORT	JOB NO. 4918-78-245
TMcS DRAWING NO. 816780 REV. E	REPORT NO. 4918-245
CUST. DRAWING NO. N/A	LOT NO. QUALIFICATION
ITEM SAFETY AND ARMING (S & A) DEVICE	LOT SIZE. FOURTEEN (14)

TEST PERFORMED BY

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA

TEST AUTHORIZED BY
NATIONAL AERONAUTIC AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
MARSHALL SPACE FLIGHT CENTER, ALABAMA

CONTRACT NO.: NAS 8-31973

	DATE	SIGNATURE
TEST ENGINEER	5/3/78	Ray Lowe
PROJECT ENGINEER	5/19/78	Frank Montela
RELIABILITY	5/19/78	J Keyser
GOVERNMENT	5/22/78	S. Parenton
TEST DATA SECTION	5/22/78	Peggy Howe

B (12/73)

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McCORMICK SELPH
A TELEDYNE COMPANY
HOLLISTER, CALIFORNIA

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JOB NUMBER 4918-78 W.O. 245

REPORT NUMBER 4918-245

DATE 24 APRIL 1978

REASON FOR TEST

QUALIFICATION TESTING PER NASA/MSFC CONTRACT NAS-8-31973 c/o MOD. 7

SEE TABLE I FOR LIST OF TESTS PERFORMED

DESCRIPTION OF TEST SAMPLE

FOURTEEN (14) EACH SAFETY AND ARMING (S & A) DEVICES TMc/S DWG. 816780 REV. E

TMc/S PART NUMBER 816780-3 REV. E

SUMMARY OF RESULTS

THE SAFETY AND ARMING DEVICE MET ALL THE ENVIRONMENTAL AND FUNCTIONAL TESTS.

REFER TO DISCREPANCY REPORTS 37636 AND 29129 FOR TEST ANOMALIES.

DISPOSITION OF TEST SAMPLES

UNITS ON HOLD AT TMc/S

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TABLE I
QUALIFICATION TEST SEQUENCE

	QTP 816780 PARA.	NASA 10A0 0465 PARA.	SERIAL NUMBERS					
			5,6 & 8	9-10	11-13	14 & 16	17-18	19-20
			UNIT NUMBERS					
			1-3	4-5	6-8	9-10	11-12	13-14
Acceptance (Nondestructive)	(1)	4.4.2	1	1	1	1	1	1
Thermal Shock	5.1	4.4.3	2	2	2	2	-	-
Salt Fog	5.2	4.3.4	3	3	3	3	-	-
Sinusoidal Vibration (3)	5.3	4.3.6	4	4	4	4	2	2
Random Vibration (3)	5.4	4.3.6						
a. Mission 1 (2)			4	4	4	4	2	2
b. Mission 2-6 (2)			-	-	-	-	3	3
c. Mission 7-10 (2)			-	-	-	-	-	4
Shock	5.5	4.3.9						
a. Mission 1 (2)			-	-	-	5	4	5
b. Mission 2-6 (5 times listed duration) (2)			-	-	-	-	5	6
c. Mission 7-10 (4 times listed duration) (2)			-	-	-	-	-	7
Temperature-Humidity	5.6	4.3.8	5	5	5	6	6	8
Leak Test	5.7	4.3.7	6	6	6	7	7	9
Electrical Checkout	5.8	4.3.10	7	7	7	8	8	10
Temperature Electrical Cycle	5.9	4.3.11	8	8	8	9	9	11
Low Temp. Function Armed	5.10	4.3.12	9	-	-	-	-	12
Low Temp. Function Safe	5.10	4.3.13	-	9	-	-	-	-
High Temp. Function Armed	5.10	4.3.14	-	-	9	-	10	-
High Temp. Function Safe	5.10	4.3.15	-	-	-	10	-	-

(1) All specimens passed the nondestructive portion of the acceptance test, and data from the acceptance test was submitted under a separate Lot Acceptance Report No. 4918-246

(2) Electrical checkout performed in accordance with paragraph 5.8 following this test environment.

(3) Sequence of sinusoidal and random vibration optional

TEST SUMMARY SHEET

JOB NUMBER 4313 REPORT NUMBER 4913-243 TMc/S PART NUMBER 816780-3

CUSTOMER SPECIFICATION NASA 10A00363 TMc/S PROCEDURE QTP 816780 A (1) DATE TEST COMPLETED 14 APRIL 1978

TYPE OF TEST	(2) REFERENCE PARAGRAPH	MEASURED VALUES MINIMUM	MEASURED VALUES MAXIMUM	NUMBER OF UNITS TESTED	NUMBER OF UNITS ACCEPTED	REMARKS AND/OR UNTOWARD INCIDENTS
THERMAL SHOCK	5.1	-10°F 4 hrs.	+160°F 4 hrs.	10	10	
SALT FOG	5.2	5% SALT 48 hrs.	---- ----	10	10	
SINE VIBRATION	5.3	5 ms 0.80 in.dia	50 Hz 3.0 g peak	14	14	
RANDOM VIBRATION MISSION 1	5.4	20 Hz 11.9 grms	2000 Hz 22.9 grms	14	14	
ELECT. CHECK-OUT AFTER MISSION 1 VIBRATION	5.8	24 vdc ----	32 vdc 250 Milli-SECONDS	14	13	UNIT NO. 2, SERIAL NO. 0006 ROTATED BEYOND 90 DEGREES FROM "SAFE" TO "ARM" POSITION. REF. TMc/S D.R. 37636
RANDOM VIBRATION MISSION 2-6	5.4	20 Hz 11.9 grms	2000 Hz 22.9 grms	4	4	
ELECT. CHECK-OUT AFTER MISSION 2-6 VIBRATION	5.8	24 vdc ----	32 vdc 250 MILLI-SECONDS	4	4	

Reference paragraphs (1) Customer Specification (2) TMc/S Procedure

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TEST SUMMARY SHEET

JOB NUMBER 4918 REPORT NUMBER 4918-245 TMc/S PART NUMBER 816780-3

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE QTP 816780 A (1) DATE TEST COMPLETED 14 APRIL 1978

TYPE OF TEST	(2) REFERENCE PARAGRAPH	MEASURED VALUES		NUMBER OF UNITS		REMARKS AND/OR UNTOWARD INCIDENTS
		MINIMUM	MAXIMUM	TESTED	ACCEPTED	
RANDOM VIBRATION MISSION 7-10	5.4	20 Hz 11.9 grms	2000 Hz 22.9 grms	2	2	
ELECT. CHECK-OUT AFTER MISSION 7-10 VIBRATION	5.8	24 vdc ----	32 vdc 250 MILLI-SECONDS	2	2	
SHOCK MISSION I	5.5	6 g peak 50 Hz 100 MS	1875 g peak 10 K Hz 300 MS	6	5	UNIT NO. 14, SERIAL NO. 0020 FAILED TO CYCLI FROM "SAFE" TO "ARM" POSITION AFTER COMPLE-TION OF ORDNANCE SHOCK. SEE TMc/S D.R. 29129
ELECT. CHECK-AFTER MISSION I	5.8	24 vdc -----	32 vdc 250 MILLI-SECONDS	6	5	SEE COMMENT ABOVE
SHOCK MISSION 2-6	5.5	6 g peak 50 Hz 100 ms	1875 g peak 10 K Hz 300 ms	3	3	
ELECT. CHECK-OUT AFTER MISSION 2-6	5.8	24 vdc -----	32 vdc 250 MILLI-SECONDS	3	3	
SHOCK MISSION 7-10	5.5	6 g peak 50 Hz 100 ms	1875 g peak 10 K Hz 300 ms	1	1	
ELECT CHECK-OUT AFTER MISSION 7-10	5.8	24 vdc -----	32 vdc 250 MILLI-SECONDS	1	1	

Reference paragraphs (1) Customer Specification (2) TMc/S Procedure

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TEST SUMMARY SHEET

JOB NUMBER 4918 REPORT NUMBER 4918-245 TMc/S PART NUMBER 816780-3

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE QTP 816780 A (1) DATE TEST COMPLETED 14 APRIL 1978

TYPE OF TEST	② REFERENCE PARAGRAPH	MEASURED VALUES MINIMUM	MEASURED VALUES MAXIMUM	NUMBER OF UNITS TESTED	NUMBER OF UNITS ACCEPTED	REMARKS AND/OR UNTOWARD INCIDENTS
TEMPERATURE-HUMIDITY	5.6	85% RH 82°F 240 hrs.	95% RH 160°F	12	12	
LEAK	5.7	2 minutes 1 PSIA	----- -----	12	12	
ELECT. CHECK-OUT AFTER TEMP-HUMIDITY AND LEAK	5.8	24 vdc -----	32 vdc 250 MILLI-SECONDS	12	12	
TEMP. ELECT. CHECKOUT AFTER TEMP-HUMIDITY AND LEAK	5.9	24 vdc ---- +20°F	32 vdc 250 MILLI-SECONDS +165°F	12	12	
ELECT. CHECK OUT AFTER RE-WORK	5.8	24 vdc -----	32 vdc 250 MILLI-SECONDS	2	2	
TEMP. ELECT. CHECKOUT AFTER RE-WORK	5.9	24 vdc ----- +20°F	32 vdc 250 MILLI-SECONDS +165°F	2	2	
+20°F FUNCTION ARMED	5.10	+20°F	-----	5	5	
+20°F FUNCTION SAFE	5.10	+20°F	-----	2	2	
+165°F FUNCTION ARMED	5.10	-----	+165°F	5	5	
+165°F FUNCTION SAFE	5.10	-----	+165°F	2	2	

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Reference paragraphs ① Customer Specification ② TMc/S Procedure

FORM NO. 396 Rev B (3/73)

TELEDYNE McCORMICK SELPH

Hollister, Calif. • 95023

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TEST REPORT

JOB NUMBER 4918-78 W.O. 245

REPORT NUMBER 4918-245

DATE 11 APRIL 1978

EQUIPMENT LIST

ITEM NO.	NAME	MANUFACTURER	MODEL	ACCURACY	CALIBRATION DUE DATE
1	OHMMETER	ALINCO	101-5F	± 1% RDG.	5/14/78
2	OHMMETER	FREED	1620	± 5% RDG.	5/7/78
3	RECORDER, MILLIVOLT	LEEDS NORTHRUP	0-10MV	± 1% FS	5/28/78
4	RECORDER, TEMPERATURE	KAYE INSTRUMENTS	6100	± 1°F (RDG.)	5/7/78
5	SALT SPRAY CHAMBER	BEMCO	2011	N/A	N/A
6	TEMPERATURE CHAMBER	MISSIMER	N/A	USE WITH CALIB. INST.	
7	TEMPERATURE CHAMBER	INRECO	SHOCK CHAMBER USE WITH CALIB. INST.		
8	TEMPERATURE HUMIDITY	TENNEY	TH-27	± 2% FS	5/14/78
9	HYDROMETER	CENCO	1.0-1.225	± 2 DIV.	11/21/78
10	P.H. ANALYZER	LAMOTTE	OCTET COMPARATOR	± 0.1 PH	12/21/78
11	GRADUATED CYLINDER	KIMAX	0-100 ML	N/A	N/A
12	MANOMETER	MERIAM INST.	0-30 IN.	N/A	N/A
13	VOLT OHMMETER	SIMPSON	27°	± 2% DC	5/14/78
14	D.C. POWER SUPPLY	TRYGON ELECTRIC	S36-5	USE WITH CALIB. INST.	
15	FUNCTION MONITOR	DOUGLAS	SA1077-1	N/A	N/A
16	CABLE	DOUGLAS	SA1077-3	N/A	N/A
17	OSCILLOGRAPH	HONEYWELL	906	USE WITH CALIB. INST.	
18	TIME MARK GENERATOR	TMc/S	1102	.001%	5/7/78
19	MULTIMETER	FAIRCHILD	7000	.1% RDG.	5/28/78
20	TORQUE WRENCH	ARMSTRONG	FR300-1	3%	4/21/78
21	FIRING UNIT	SUPPLIED BY NASA	N/A	N/A	N/A

McCORMICK-SELPH
A HEDYNE COMPANY

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DISCREPANCY REPORT

No. 37636

VENDOR OR WORK AREA Applied Engineering Test Laboratories DWG. NO. 816780-3 REV.

DATE 21 March 1978 P.O./W.O. NO. 96064 RR/245 JOB NO. 4918 REFER TO TMCS OTP 816780 CA

PART Safety & Arming Device LOT SIZE 14 ea. (QUALIFICATION) SAMPLE SIZE N/A

M	DESCRIPTION OF DEFECTS DWG. &/OR SPEC.	INSPECTION TIME ACTUAL	SAMPLE AQL	100% QTY.	100%
	5.5.4	UNIT S/N 0006 FAILED TO STOP AT 90° ROTATION Required FROM SAFE TO Arm POSITION. UNIT cycled PAST 90° ON Every OTHER SWITCH TO THE Arm POSITION		1 ea	1 ea
	Elapsed Time for 90° ROTATION Shall NOT exceed .008 ETC	THIS UNIT IS SPECIMEN #2 OF QUAL TEST LOT			

PLANNER | PURCHASING | INSPECTOR J. Foshee

DISPOSITION ☐ M.R.B. ☒ P.R.B.

M	REWORK AND USE AS IS	UAI	RTV	SCRAP
	Remove specs from the T+H test. Release to reliability for evaluation. Initials 3-27-78 Concur DA Chuck			
1	Drill out & remove spring pins and break seal to loosen bottom Hsg Half for engineering Disposition			

QUALITY ASSURANCE R E McDonald 3-27-78 Frank Montyle 4/3/78 | CUSTOMER | GOVERNMENT

CORRECTIVE ACTION TAKEN TO PREVENT RECURRENCE OF THE ABOVE DISCREPANCIES (TO BE COMPLETED BY THE VENDOR OR PRODUCTION SUPERVISOR).

See page #3 for C/A

EFFECTIVITY (DATE OR SERIAL NO.)

3-2-78

R E McDonald
SIGNATURE

QE
TITLE

(USE OTHER SIDE IF REQUIRED)

D.R. NO. [illegible]

DISCREPANCY REPORT CONTINUATION SHEET

PAGE 2 OF 2

DWG. NO. 816780 P.O./W.O. NO. 96064/245 LOT NO.

ITEM	DWG. &/OR SPEC.	ACTUAL	AQL	QTY.	100%

DISPOSITION

ITEM	REWORK AND USE AS IS	UAI	RTV	SCRAP
	Final Disposition			
	The condition was traced to an oversized improperly drilled hole for the spring pin which holds the clutch 817183-1 to the solenoid shaft. This condition allowed movement between clutch and solenoid when the clutch made contact with detent. The result was failure of the detent to positively engage the rotor. The cause was confirmed when a drop of sealant to secure the pin to the clutch corrected the condition.			
	The unit successfully passed the remaining tests.			
	Corrective Action			
	Repair or replace drill fixture and add a specific instruction to verify hole is drilled properly and no movement between clutch and solenoid.			
	Frank Mirtich 4/28/78			

FORM 82 A JAN/69 ORIGINATOR

AEROJET ELECTRO SYSTEMS
AEROJET ELECTRONIC SYSTEMS DIVISION
AEROJET ORDNANCE COMPANY
AEROJET SOLID PROPULSION COMPANY
AEROJET STRATEGIC PROPULSION COMPANY
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DISCREPANCY REPORT CONTINUATION SHEET

PAGE 4 OF 5

DWG. NO. 81C180 P.O./W.O. NO. 96-0648-1215 LOT NO. N/A

ITEM	DWG. &/OR SPEC.	ACTUAL	AQL	QTY.	100%

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DISPOSITION

ITEM	REWORK AND USE AS IS	UAI	RTV	SCRAP
1	The problem was found to be a switch W2 assembly which had opened under the ordnance sched. pulse and jammed in the open position. Other sub assemblies containing a total of six switches were tested and only this one switch was affected. It may be an isolated case of a warped switch contained with a shelf life test. Visual check input received to level of 35mA against an 18mA requirement. The switch is now free and travels appears to be operating properly. Cut the three (3) leads (two (2) leads from switch) to wrap specimen. Replace and tie harness with Velcro tape. Continue testing in start of sequence no. 11 of the qualification test program for specimen #4. Windy Starks Circuit, Inc. Date 3/22/78			

DISCREPANCY REPORT CONTINUATION SHEET

DWG. NO. 816780 P.O./W.O. NO. 96064 / 245 LOT NO.

ITEM	DWG. &/OR SPEC.	ACTUAL	AQL	QTY.	100%

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DISPOSITION

ITEM	REWORK AND USE AS IS	UAI	RTV	SCRAP
	Final Disposition Electrical checkout, temperature electrical cycle, and low temperature "ARMED" firing were completed successfully on this unit. The malfunctioning switch was removed from the unit prior to firing for examination. Corrective Action The switch condition was caused by improper adjustment during assembly. Assembly and adjustment instructions will be revised to include a specific, positive adjustment of the switches during assembly. Inspection will confirm proper adjustment. Frank Motyka 4/28/78			

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA

TEST DATA SHEET
FOR
THERMAL SHOCK

REPORT NUMBER 4918-245 DATE 1 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

PART NAME SAFETY AND ARMING DEVICE TMc/S PART NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 "C" TMc/S PROCEDURE QTP 816780 REV. A (1)

TEST EQUIPMENT ITEM NUMBERS 3 & 7

REQUIREMENTS PARAGRAPH 5.1.5 THERMAL SHOCK TEST PER MIL-STD-810
METHOD 503 PROCEDURE I

UNIT NO.	SERIAL NO.	CONDITION TIME HOURS	CONDITION TIME MINUTES	TIME AND DATE IN	TIME AND DATE OUT	TEMPERATURE (°F)
1	0005	4	0	1320	1720	+160
2	0006			3/1/78	3/1/78	
3	0008	4	0	1725	2125	-70
4	0009			3/1/78	3/1/78	
5	0010	4	0	2130	0130	+160
6	0011			3/1/78	3/2/78	
7	0012	4	0	0135	0535	-70
8	0013			3/2/78	3/2/78	
9	0014	4	0	0540	0940	+160
10	0016			3/2/78	3/2/78	
		4	0	0945	1345	-70
				3/2/78	3/2/78	

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COMMENTS Specimens 1 thru 10 exposed to environment. No visible damage observed.

E. Horibe
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

[x] ABOVE TESTS CONDUCTED WITHOUT ADVERSE AFFECTS

[ ] DISCREPANCY/S NOTED OF UNIT/S

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA

TEST DATA SHEET
FOR
SINUSOIDAL/RANDOM GAUSSIAN
VIBRATION TEST

REPORT NUMBER 4918-245 DATE MAY 1978

JOB NUMBER 4918-78 W. O. NUMBER 245

PART NAME SAFETY AND ARMING DEVICE PART NUMBER 816780-3 REV. E

TEST EQUIPMENT ITEM NUMBERS

SPECIFICATION NASA 10A00465 REFERENCE PARA. 5.3 & 5.4 PROCEDURE QTP 816780 REV. A(1)

REQUIREMENTS SINUSOIDAL VIBRATION PER TABLE II AND LIFT-OFF RANDOM VIBRATION, BOOST RANDOM VIBRATION AND RE ENTRY RANDOM VIBRATION PER TABLE III AND TABLE IV OF TMc/S QTP 816780 REV. A (1)

NOTE: ALL THE VIBRATION TESTS REQUIRED ABOVE WAS PERFORMED AT APPROVED ENGINEERING TEST LABORATOR (AETL) - FULLERTON CALIFORNIA DIVISION. SEE APPENDIX A - AETL TEST REPORT NO. 773-2612-3 FOR COMPLETE DETAILS OF ACTUAL DATA.

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ELECTRICAL CHECKOUT

DATA SHEETS

AFTER MISSION I VIBRATION

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 1 SERIAL NO. 0005 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 2 SERIAL NO. 0006 TEST TEMP. _____

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
1	1			<3.0	<.250			<3.0	<.250		
1	1			<3.0	<.250			<3.0	<.250		

1 Serial number 0006 (specimen #2) failed to perform properly during electrical testing per paragraph 5.8.5.1 following mission 1 vibration per paragraph 5.4 of TMc/S QTP 816780 REV. A(1)

The unit was first tested and had operated correctly at the lower two voltage levels of 24 and 28 volts D.C.. However, upon application of 32 VDC the device rotated beyond 90° (approximately 12°) when cycled from the safe to the armed position. The contact tests of paragraph 5.8.5.2.2 confirmed that this overtravel was intermittent with the condition generally occurring on every other switch from safe to arm.

B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

XX DISCREPANCY/S NOTED OF UNIT/S _____

FORM NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 3 SERIAL NO. 0008 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 27 MARCH 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

UNIT NO. 4 SERIAL NO. 0009 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ALL TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
__ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 5 SERIAL NO. 0010 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 6 SERIAL NO. 0011 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

FORM NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 7 SERIAL NO. 0012 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 8 SERIAL NO. 0013 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

(AFTER MISSION 1 VIBRATION)

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 14 MARCH 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

UNIT NO. 9 SERIAL NO. 0014 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
__ DISCREPANCY/S NOTED OF UNIT/S _____

QAR NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 13 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 10 SERIAL NO. 0016 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 14 MARCH 1978
JOB NUMBER 4918-78 W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 13 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 11 SERIAL NO. 0017 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
__ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 12 SERIAL NO. 0018 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

DRAWING NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S

FORM NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 1 VIBRATION)
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 14 SERIAL NO. 0020 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CIRCUITRY CHECKS
AFTER MISSION 1 VIBRATION

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) J-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.75 ohms	

(1) UNIT POSITION S = SAFE A= ARM

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
1	S	≤.750V				OPEN				≤.750V	OPEN	10.79
0005	A	OPEN				≤.750V						
3	S	≤.750V				OPEN						10.73
0008	A	OPEN				≤.750V						
4	S	≤.750V				OPEN						10.79
0009	A	OPEN				≤.750V						
5	S	≤.750V				OPEN						10.79
0010	A	OPEN				≤.750V						
6	S	≤.750V				OPEN						10.74
0011	A	OPEN				≤.750V						
7	S	≤.750V				OPEN						10.70
0012	A	OPEN				≤.750V						
8	S	.750V				OPEN						10.77
0013	A	OPEN				≤.750V				≤.750V	OPEN	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ALL TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CIRCUITRY CHECKS AFTER MISSION 1

REPORT NUMBER 4918-245 VIBRATION
DATE 14 MARCH 1978
JOB NUMBER 4918-78
W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE
TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) G-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.2 Ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
9	S	≤.750V				OPEN				≤.750V	OPEN	10.79
0014	A	OPEN				≤.750V						
10	S	≤.750V				OPEN						10.81
0016	A	OPEN				≤.750V						
11	S	≤.750V				OPEN						10.77
0017	A	OPEN				≤.750V						
12	S	≤.750V				OPEN						10.79
0018	A	OPEN				≤.750V						
13	S	≤.750V				OPEN						10.77
0019	A	OPEN				≤.750V						
14	S	≤.750V				OPEN						11.06
0020	A	OPEN				≤.750V						
										▼	▼	

(1) UNIT POSITION S = SAFE A = ARM

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S _____

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
INSULATION RESISTANCE

AFTER MISSION 1 VIBRATION

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 2

REQUIREMENTS WITH THE ROTOR IN THE SAFE POSITION, THE INSULATION RESISTANCE BETWEEN CURRENT CARRYING PARTS AND THE CASE SHALL BE GREATER THAN 100 MEGOHMS AT 500 VDC.

UNIT S/N	MEGOHMS - PIN (SHOWN BELOW) TO CASE													UNIT NO.
	F	G	H	J	K	L	M	N	P	R	S	T	U	
	*	*	*	*	*	*	*	*	*	*	*	*	*	
0005														1
0008														3
0009														4
0010														5
0011														6
0012														7
0013														8
0014														9
0016														10
0017														11
0018	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	12
0019	*	*	*	*	*	*	*	*	*	*	*	*	*	13
0020	*	*	*	*	*	*	*	*	*	*	*	*	*	14

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* INDICATES INSULATION RESISTANCE GREATER THAN 100 MEGOHMS

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET FOR CONTINUITY TEST AFTER MISSION I VIBRATION

REPORT NUMBER 4918-245 DATE 27 MARCH 1978
JOB NUMBER 4918-78 W.O. NUMBER 245
T/S PART NAME SAFETY & ARMING DEVICE T/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465 T/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 13
COMMENTS: VERIFY THAT AN OPEN CIRCUIT EXISTS BETWEEN THE CIRCUITS LISTED BELOW

UNIT NO.	RECORD OPEN CIRCUIT BY (x) SYMBOL- CIRCUIT V TO FOLLOWING CIRCUIT CONNECTIONS: A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	SERIAL NUMBER
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0005
1																			
2																			0008
3																			0009
4																			0010
5																			0011
6																			0012
7																			0013
8																			0014
9																			0016
10																			0017
11																			0018
12	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	0019
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0020
14	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

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EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

ELECTRICAL CHECKOUT

DATA SHEET

AFTER MISSION 2-6

VIBRATION

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER MISSION 2-6 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10M00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 11 SERIAL NO. 0017 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

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H. Koue
TECHNICIAN

R. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER MISSION 2-6 VIBRATION

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
DATE 14 MARCH 1978
TMc/S PART NAME SAFETY & ARMING DEVICE
W.O. NUMBER 245
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S DWG. NUMBER 816780 REV. E
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
TMc/S PROCEDURE ATP 816780 REV. A
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 12
SERIAL NO. 0018
TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

H. Koue
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S

TMC NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER MISSION 2-6 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
		X				X				X	
		X				X				X	
		X				X				X	
		X				X				X	
		X				X				X	
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X

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TECHNICIAN

B. Purinton
WITNESS

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EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET AFTER MISSION 2-6 VIBRATION
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 14 SERIAL NO. 0020 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
▼	▼	X		▼	▼	X		▼	▼	X	
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

H. Koue
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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER MISSION 2-6 VIBRATION

TEST DATA SHEET
FOR
CIRCUITRY CHECKS

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) J-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.72 Ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
												X
0017	S	≤.750V	—	—	—	OPEN	—	—	—	≤.750V	OPEN	10.77
11	A	OPEN	—	—	—	≤.750V	—	—	—			X
0018	S	≤.750V	—	—	—	OPEN	—	—	—			10.79
12	A	OPEN	—	—	—	≤.750V	—	—	—			X
0019	S	≤.750V	—	—	—	OPEN	—	—	—			10.77
13	A	OPEN	—	—	—	≤.750V	—	—	—			X
0020	S	≤.750V	—	—	—	OPEN	—	—	—			11.06
14	A	OPEN	—	—	—	≤.750V	—	—	—			X
			—	—	—		—	—	—			
			—	—	—		—	—	—			X
			—	—	—		—	—	—			
			—	—	—		—	—	—			X
			—	—	—		—	—	—			
			—	—	—		—	—	—			X
			—	—	—		—	—	—			

(1) UNIT POSITION S = SAFE A = ARM

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S _____

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
INSULATION RESISTANCE

AFTER MISSION 2-6 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 2

REQUIREMENTS WITH THE ROTOR IN THE SAFE POSITION, THE INSULATION RESISTANCE BETWEEN CURRENT CARRYING PARTS AND THE CASE SHALL BE GREATER THAN 100 MEGOHMS AT 500 VDC.

UNIT S/N	MEGOHMS - PIN (SHOWN BELOW) TO CASE													UNIT NO.
	F	G	H	J	K	L	M	N	P	R	S	T	U	
0017	*	*	*	*	*	*	*	*	*	*	*	*	*	11
0018														12
0019														13
0020														14
	*	*	*	*	*	*	*	*	*	*	*	*	*	

* INDICATES INSULATION RESISTANCE GREATER THAN 100 MEGOHMS

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET FOR CONTINUITY TEST

AFTER MISSION 2-6 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 13

REQUIREMENTS VERIFY THAT AN OPEN CIRCUIT EXISTS BETWEEN THE CIRCUITS LISTED BELOW

UNIT NO.	RECORD OPEN CIRCUIT BY (X) SYMBOL- CIRCUIT V TO FOLLOWING CIRCUIT CONNECTIONS: A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	S/N
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11																			0017
12																			0018
13																			0019
14																			0020
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

ELECTRICAL CHECKOUT

DATA SHEETS

AFTER MISSION 7-10 VIBRATION

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)
AFTER MISSION 7-10 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FORM NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)
AFTER MISSION 7-10 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 14 SERIAL NO. 0020 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CIRCUITRY CHECKS
AFTER MISSION 7-10 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) G-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.72 ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
0019	S	≤.750V	→	→	→	OPEN	→	→	→	≤.750V	OPEN	10.77
13	A	OPEN	→	→	→	≤.750V	→	→	→			
0020	S	≤.750V	→	→	→	OPEN	→	→	→			11.06
14	A	OPEN	→	→	→	≤.750V	→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			
			→	→	→		→	→	→			

(1) UNIT POSITION S = SAFE A = ARM

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S _____

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
INSULATION RESISTANCE
AFTER MISSION 7-10 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 2

REQUIREMENTS WITH THE ROTOR IN THE SAFE POSITION, THE INSULATION RESISTANCE BETWEEN CURRENT CARRYING PARTS AND THE CASE SHALL BE GREATER THAN 100 MEGOHMS AT 500 VDC.

UNIT S/N	MEGOHMS - PIN (SHOWN BELOW) TO CASE													UNIT NO.
	F	G	H	J	K	L	M	N	P	R	S	T	U	
	*	*	*	*	*	*	*	*	*	*	*	*	*	
0019														13
0020														14
	*	*	*	*	*	*	*	*	*	*	*	*	*	

* INDICATES INSULATION RESISTANCE GREATER THAN 100 MEGOHMS

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CONTINUITY TEST
AFTER MISSION 7-10 VIBRATION

REPORT NUMBER 4918-245 DATE 14 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 13

QUIREMENTS: VERIFY THAT AN OPEN CIRCUIT EXISTS BETWEEN THE CIRCUITS LISTED BELOW

UNIT NO.	RECORD OPEN CIRCUIT BY (×) SYMBOL- CIRCUIT V TO FOLLOWING CIRCUIT CONNECTIONS: A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	SERIAL NUMBER
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
15																			0019
14																			0020
	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	

H. KOUE
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VALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA

TEST DATA SHEET
FOR
SHOCK TEST

REPORT NUMBER 4918-245 DATE

JOB NUMBER 4918-78 W. O. NUMBER 245

TMc/S PART NAME SAFETY AND ARMING DEVICE TMc/S PART NUMBER 816780-3 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE QTP 816780 REV. A (1)

TEST EQUIPMENT ITEM NUMBERS SEE AETL TEST REPORT NO. IN APPENDIX B

REQUIREMENTS ORDNANCE SHOCK, SRB WATER LANDING & SRB PARACHUTE DEPLOYMENT PER TABLE V AND TABLE VI OF TMc/S QTP 816780 REV. A (1)

NOTE: ALL THE SHOCK TESTS REQUIRED ABOVE WAS PERFORMED AT APPROVED ENGINEERING TEST LABORATORY (AETL) FULLERTON CALIFORNIA DIVISION. SEE APPENDIX A - AETL TEST REPORT NO. 773-2612-3 FOR COMPLETE DETAILS OF ACTUAL DATA.

ELECTRICAL CHECKOUT

DATA SHEETS

AFTER MISSION 1

SHOCK

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET AFTER MISSION 1 SHOCK
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978
JOB NUMBER 4918-78 W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 9 SERIAL NO. 0014 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER MISSION 1 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 10 SERIAL NO. 0016 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER MISSION 1 SHOCK

REPORT NUMBER 4918-245
DATE 16 MARCH 1978
JOB NUMBER 4918-78
W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE
TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 11 SERIAL NO. 0017 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

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H. Koue
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

[X] ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
[ ] DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET AFTER MISSION 1 SHOCK
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 16 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 12 SERIAL NO. 0018 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

H. Koue
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

DCN NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET AFTER MISSION 1 SHOCK
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TM&S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 16 MARCH 1978
W.O. NUMBER 245
TM&S DWG. NUMBER 816780 REV. E
TM&S PROCEDURE ATP 816780 REV. A

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
≤3.0	≤.250			≤3.0	≤.250			≤3.0	≤.250		
≤3.0	≤.250			≤3.0	≤.250			≤3.0	≤.250		

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R. Koue
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

FORM NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER MISSION 1 SHOCK

REPORT NUMBER 4918-245
JOB NUMBER 4918-78 DATE 15 MARCH 1978
TMc/S PART NAME SAFETY & ARMING DEVICE W.O. NUMBER 245
CUSTOMER SPECIFICATION NASA 10A00465 TMc/S DWG. NUMBER 816780 REV. E
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18 TMc/S PROCEDURE ATP 816780 REV. A
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 14 SERIAL NO. 0020 TEST TEMP. +70°F

UNIT NO. 14 SERIAL NO. 0020 FAILED TO CYCLE FROM "SAFE" TO "ARM" AFTER COMPLETION OF MISSION 1 ORDNANCE SHOCK IN THE "Y" AXIS. UNABLE TO PERFORM THIS TEST DUE TO THIS ANOMALY

H. Koue
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☐ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☒ DISCREPANCY/S NOTED OF UNIT/S S/N 0020 - SEE ABOVE EXPLANATION

FORM NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET AFTER MISSION 1 SHOCK
FOR
CIRCUITRY CHECKS

REPORT NUMBER 4918-245
DATE 27 MARCH 1978 & 16 MARCH 1978
JOB NUMBER 4918-78
W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE
TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) G-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.72 ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
0017 11	S	≤.750V				OPEN				≤.750V	OPEN	10.77
	A	OPEN				≤.750V						
0018 12	S	≤.750V				OPEN						10.79
	A	OPEN				≤.750V						
0019 13	S	≤.750V				OPEN						10.77
	A	OPEN				≤.750V						
0020 14	S	≤.750V	OPEN	≤.750	≤.750	OPEN	.220	OPEN	OPEN	≤.750		-----
	A	OPEN				≤.750V						
0014 9	S	≤.750V				OPEN						10.79
	A	OPEN				≤.750V						
0016 10	S	≤.750V				OPEN						10.81
	A	OPEN				≤.750V						

(1) UNIT POSITION S = SAFE A = ARM

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B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S _____

FORM NO. 1191

FIGURE 5
-29-

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
INSULATION RESISTANCE

AFTER MISSION 1 SHOCK

REPORT NUMBER 4918-245 DATE 16 MARCH 1978
27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 2

REQUIREMENTS WITH THE ROTOR IN THE SAFE POSITION, THE INSULATION RESISTANCE BETWEEN CURRENT CARRYING PARTS AND THE CASE SHALL BE GREATER THAN 100 MEGOHMS AT 500 VDC.

S/N	MEGOHMS - PIN (SHOWN BELOW) TO CASE													UNIT NO.
	F	G	H	J	K	L	M	N	P	R	S	T	U	
0014	*	*	*	*	*	*	*	*	*	*	*	*	*	9
0016														10
0017														11
0018														12
0019														13
1														14
	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
	*	*	*	*	*	*	*	*	*	*	*	*	*	

* INDICATES INSULATION RESISTANCE GREATER THAN 100 MEGOHMS

B. Cash
TECHNICIAN

B. Purinton
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VALIDATION OF TEST RESULTS (CHECK ONE)

☐ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☒ 1 & DISCREPANCY/S NOTED OF UNIT/S S/N 0020 not tested - ref. explanation on operational (90° Rotation) data sheet after Mission 1 Shock

CAV NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET FOR CONTINUITY TEST

AFTER MISSION 1 SHOCK

27 MARCH 1978

REPORT NUMBER 4918-245 DATE 16 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 13

REQUIREMENTS VERIFY THAT AN OPEN CIRCUIT EXISTS BETWEEN THE CIRCUITS LISTED BELOW

UNIT NO.	RECORD OPEN CIRCUIT BY (x) SYMBOL- CIRCUIT V TO FOLLOWING CIRCUIT CONNECTIONS: A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	S/N
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0017
12																			0018
13																			0019
14																			1
9																			0014
10																			0016
	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

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TECHNICIAN

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EVALUATION OF TEST RESULTS (CHECK ONE)

☐ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☒ DISCREPANCY/S NOTED OF UNIT/S S/N 0020 NOT TESTED - REF. EXPLANATION ON OPERATIONAL (90° ROTATION) DATA SHEET AFTER MISSION 1 SHOCK

ELECTRICAL CHECKOUT

DATA SHEETS

AFTER MISSION 2-6 SHOCK

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 2-6 SHOCK)
FOR
OPERATIONAL (90° ROTATION)
AFTER MISSION 2-6 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 11 SERIAL NO. 0017 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. CASH
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B. Purinton
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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

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FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET (AFTER MISSION 2-6 SHOCK)

FOR

OPERATIONAL (90° ROTATION)
AFTER MISSION 2-6 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 12 SERIAL NO. 0018 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. CASH
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B. Purinton
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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

SWV NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)
AFTER MISSION 2-6 SHOCK

REPORT NUMBER 4918-245 DATE 16 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

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FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CIRCUITRY CHECKS
AFTER MISSION 2-6 SHOCK

REPORT NUMBER 4918-245 — DATE 16 MARCH 1978 / 27 MARCH 1978
JOB NUMBER 4918-78 — W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE — TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465 — TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) G-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.22 ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
11	S	≤.750V			→	OPEN			→	≤.750V	OPEN	
0017	A	OPEN			→	≤.750V			→			10.77
12	S	≤.750V			→	OPEN			→			
0018	A	OPEN			→	≤.750V			→			10.79
13	S	≤.750V			→	OPEN			→			
0019	A	OPEN			→	≤.750V			→			10.77
					→				→			
					→				→			
					→				→			
					→				→			
					→				→			
					→				→			
					→				→			
					→				→			
					→				→	▼	▼	
					→				→			

(1) UNIT POSITION S = SAFE A = ARM

B. CASH
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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
__ DISCREPANCY/S NOTED OF UNIT/S _____

DRAWING NO. 1191

FIGURE 5
-29-

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
INSULATION RESISTANCE
AFTER MISSION 2-6 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 2

REQUIREMENTS WITH THE ROTOR IN THE SAFE POSITION, THE INSULATION RESISTANCE BETWEEN CURRENT CARRYING PARTS AND THE CASE SHALL BE GREATER THAN 100 MEGOHMS AT 500 VDC.

S/N	MEGOHMS - PIN (SHOWN BELOW) TO CASE													UNIT NO.
	F	G	H	J	K	L	M	N	P	R	S	T	U	
	*	*	*	*	*	*	*	*	*	*	*	*	*	11
0017														12
0018														13
0019														
	*	*	*	*	*	*	*	*	*	*	*	*	*	
	*	*	*	*	*	*	*	*	*	*	*	*	*	

* INDICATES INSULATION RESISTANCE GREATER THAN 100 MEGOHMS

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B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET FOR CONTINUITY TEST

AFTER MISSION 2-6 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 13

REQUIREMENTS VERIFY THAT AN OPEN CIRCUIT EXISTS BETWEEN THE CIRCUITS LISTED BELOW

UNIT NO.	RECORD OPEN CIRCUIT BY (×) SYMBOL- CIRCUIT V TO FOLLOWING CIRCUIT CONNECTIONS: A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	SERIAL NUMBER
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	0017
11																			0018
12																			0019
13																			
	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	

B. CASH
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B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

ELECTRICAL CHECKOUT

DATA SHEETS

AFTER MISSION 7-10 SHOCK

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)
AFTER MISSION 7-10 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

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FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CIRCUITRY CHECKS
AFTER MISSION 7-10 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) G-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.72 ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
13	S	≤.750V				OPEN				≤.750V	OPEN	10.77
0019	A	OPEN				≤.750V						
---	S	≤.750V				OPEN						
	A	OPEN				≤.750V						
	S	≤.750V				OPEN						
	A	OPEN				≤.750V						
	S	≤.750V				OPEN						
	A	OPEN				≤.750V						
	S	≤.750V				OPEN						
	A	OPEN				≤.750V						
	S	≤.750V				OPEN						
	A	OPEN				≤.750V						
	S	≤.750V				OPEN						
	A	OPEN				≤.750V						
	S	≤.750V				OPEN						
	A	OPEN				≤.750V						

(1) UNIT POSITION S = SAFE A = ARM

B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

DRW NO. 1191

FIGURE 5

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
INSULATION RESISTANCE
AFTER MISSION 7-10 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 2

REQUIREMENTS WITH THE ROTOR IN THE SAFE POSITION, THE INSULATION RESISTANCE BETWEEN CURRENT CARRYING PARTS AND THE CASE SHALL BE GREATER THAN 100 MEGOHMS AT 500 VDC.

UNIT/ S/N	MEGOHMS - PIN (SHOWN BELOW) TO CASE												
	F	G	H	J	K	L	M	N	P	R	S	T	U
	*	*	*	*	*	*	*	*	*	*	*	*	*
137 0019													
	*	*	*	*	*	*	*	*	*	*	*	*	*

* INDICATES INSULATION RESISTANCE GREATER THAN 100 MEGOHMS

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B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CONTINUITY TEST
AFTER MISSION 7-10 SHOCK

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 13

REQUIREMENTS VERIFY THAT AN OPEN CIRCUIT EXISTS BETWEEN THE CIRCUITS LISTED BELOW

UNIT NO.	RECORD OPEN CIRCUIT BY (×) SYMBOL- CIRCUIT V TO FOLLOWING CIRCUIT CONNECTIONS: A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	SERIAL NUMBER
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	
13																			0019
	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	

B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
TEMPERATURE/HUMIDITY TEST

REPORT NUMBER 4918-245 DATE 28 MARCH 1978

JOB NUMBER 4918-76 W.O. NUMBER 245

TMc/S PART NAME SAFETY AND ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION MIL-STD-810 TMc/S PROCEDURE QTP 816780 REV. A (1)

TEST EQUIPMENT ITEM NUMBERS 8

REQUIREMENTS: HUMIDITY 95 (%) TEMP. (°F) HIGH 160°F, LOW 82°F

LENGTH OF CYCLE 24 (HRS) NUMBER OF CYCLES 10

CUSTOMER PART NUMBER N/A

UNIT NO.	SER. NO.	UNIT NO.	SER. NO.
1	0005		
3	0008		
4	0009		
5	0010		
6	0011		
7	0012		
8	0013		
9	0014		
10	0016		
11	0017		
12	0018		
13	0019		

RECORDER CHART CHANGED AND IDENTIFIED			
CYCLE NO.	OPR INIT	TIME	DATE
1	BC	0930	3/29/78
2	BC	0930	3/30/78
3	BC	0930	3/31/78
4	BC	0930	4/1/78
5	BC	0930	4/2/78
6	BC	0930	4/3/78
7	BC	0930	4/4/78
8	BC	0930	4/5/78
9	BC	0930	4/6/78
10	BC	0930	4/7/78

REMARKS

NOTE: ALL TEST SPECIMENS LISTED WERE TESTED SIMULTANEOUSLY.

NOTE: UNIT NO. 2, S/N 0006 AND UNIT NO. 20, S/N 0020 WERE NOT SUBJECTED TO THIS TEST AS SPECIFIED IN TABLE I AND PARAGRAPH 5.6 OF TMc/S QTP 816780 DUE TO UNIT ANOMALIES OCCURRING AFTER VIBRATION AND SHOCK TESTS.

B. Cash
TECHNICIAN SIGNATURE

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

[X] ABOVE TESTS CONDUCTED WITHOUT ADVERSE AFFECTS

[ ] DISCREPANCY/S NOTED OF UNIT/S

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TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
LEAK TEST

REPORT NUMBER 4918-245 DATE 7 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY AND ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION N/A TMc/S PROCEDURE QTP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 12

REQUIREMENTS NO LEAKS AT 2" HG. ABSOLUATE

CUSTOMER PART NUMBER N/A

UNIT NUMBER	SERIAL NUMBER	VISUAL RESULTS
1	0005	NO LEAKS
3	0008	NO LEAKS
4	0009	NO LEAKS
5	0010	NO LEAKS
6	0011	NO LEAKS
7	0012	NO LEAKS
8	0013	NO LEAKS
9	0014	NO LEAKS
10	0016	NO LEAKS
11	0017	NO LEAKS
12	0018	NO LEAKS
13	0019	NO LEAKS

NOTE: UNIT NO. 2, S/N 0006 AND UNIT NO. 20, S/N 0020 WERE NOT SUBJECTED TO THIS TEST AS SPECIFIED IN TABLE I AND PARAGRAPH 5.7 OF TMc/S QTP 816780 DUE TO UNIT ANOMALIES OCCURRING AFTER VIBRATION AND SHOCK TESTS.

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

ELECTRICAL CHECKOUT

DATA SHEETS

AFTER TEMPERATURE - HUMIDITY

AND

LEAK TEST

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 1 SERIAL NO. 0005 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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F. HORIBE
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B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REMARKS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 3 SERIAL NO. 0008 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

F. HORIBE
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WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
AFTER LEAK TEST
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 10 APRIL 1978
JOB NUMBER 4918-78 W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 4 SERIAL NO. 0009 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 5 SERIAL NO. 0010 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 10 APRIL 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

UNIT NO. 6 SERIAL NO. 0011 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

F. HORIBE
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

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FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET FOR OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 10 APRIL 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

UNIT NO. 7 SERIAL NO. 0012 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

F. HORIBE
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S _____

DWG. NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET AFTER LEAK TEST
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 8 SERIAL NO. 0013 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

F. HORIBE
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 9 SERIAL NO. 0014 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

F. HORLBE
TECHNICIAN

B. Purinton
WITNESS

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 10 SERIAL NO. 0016 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

F. HORIBE
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
AFTER LEAK TEST

FOR

OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 11 SERIAL NO. 0017 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

F. HORIBE
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

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FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET AFTER LEAK TEST
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 27 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 12 SERIAL NO. 0018 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

F. HORIBE
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S_____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET AFTER LEAK TEST
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
DATE 10 APRIL 1978
W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE
TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10M00465
TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250			<3.0	<.250			<3.0	<.250		
<3.0	<.250			<3.0	<.250			<3.0	<.250		

F. HORIBE
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S _____

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TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CIRCUITRY CHECKS

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) G-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.72 ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
1/ 0005	S	<.750V				OPEN				<.750V	OPEN	11.12
	A	OPEN				<.750V						
3/ 0008	S	<.750V				OPEN						11.09
	A	OPEN				<.750V						
4/ 0009	S	<.750V				OPEN						11.13
	A	OPEN				<.750V						
5/ 0010	S	<.750V				OPEN						11.06
	A	OPEN				<.750V						
6/ 0011	S	<.750V				OPEN						10.99
	A	OPEN				<.750V						
7/ 0012	S	<.750V				OPEN						10.94
	A	OPEN				<.750V						
8/ 0013	S	<.750V				OPEN						11.04
	A	OPEN				<.750V				<.750V	OPEN	

(1) UNIT POSITION S = SAFE A = ARM

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

REV. NOV. 1191

FIGURE 5
-29-

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
CIRCUITRY CHECKS

AFTER LEAK TEST

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465

DATE 10 APRIL 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) G-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.72 ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
9/ 0014	S	≤.750V				OPEN				≤.750V	OPEN	11.08
	A	OPEN				≤.750V						
10/ 0016	S	≤.750V				OPEN						11.11
	A	OPEN				≤.750V						
11/ 0017	S	≤.750V				OPEN						10.99
	A	OPEN				≤.750V						
12/ 0018	S	≤.750V				OPEN						11.08
	A	OPEN				≤.750V						
13/ 0019	S	≤.750V				OPEN						11.02
	A	OPEN				≤.750V						

(1) UNIT POSITION S = SAFE A = ARM

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WITNESS

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EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
__ DISCREPANCY/S NOTED OF UNIT/S _____

ECN NO. 1191

FIGURE 5
-29-

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
INSULATION RESISTANCE

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 10 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 2

REQUIREMENTS WITH THE ROTOR IN THE SAFE POSITION, THE INSULATION RESISTANCE BETWEEN CURRENT CARRYING PARTS AND THE CASE SHALL BE GREATER THAN 100 MEGOHMS AT 500 VDC.

S/N	MEGOHMS - PIN (SHOWN BELOW) TO CASE													UNIT NO.
	F	G	H	J	K	L	M	N	P	R	S	T	U	
	*	*	*	*	*	*	*	*	*	*	*	*	*	
0005														1
0008														3
0009														4
0010														5
0011														6
0012														7
0013														8
0014														9
0016														10
0017														11
0018														12
0019	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	13
	*	*	*	*	*	*	*	*	*	*	*	*	*	

* INDICATES INSULATION RESISTANCE GREATER THAN 100 MEGOHMS

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VALIDATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET FOR CONTINUITY TEST

AFTER LEAK TEST

REPORT NUMBER 4918-245
DATE 10 APRIL 1978
JOB NUMBER 4918-78
W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE
TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 13
REQUIREMENTS VERIFY THAT AN OPEN CIRCUIT EXISTS BETWEEN THE CIRCUITS LISTED BELOW

UNIT NO.	RECORD OPEN CIRCUIT BY (×) SYMBOL- CIRCUIT V TO FOLLOWING CIRCUIT CONNECTIONS: A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	UNIT NUMBER
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	1
0005																			3
0008																			4
0009																			5
0010																			6
0011																			7
0012																			8
0013																			9
0014																			10
0016																			11
0017																			12
0018																			13
0019	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	

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EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

TEMPERATURE ELECTRICAL CHECKOUT

DATA SHEETS

AFTER

TEMPERATURE - HUMIDITY

AND

LEAK TEST

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 1 SERIAL NO. 0005 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 3 SERIAL NO. 0008 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET

AFTER LEAK TEST

FOR

OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 4 SERIAL NO. 0009 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

[X] ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

[ ] DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 5 SERIAL NO. 0010 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

C-2

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 6 SERIAL NO. 0011 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

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FIGURE 4

DWG. NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

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TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

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UNIT NO. 7 SERIAL NO. 0012 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

DWG. NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 8 SERIAL NO. 0013 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

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TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245

JOB NUMBER 4918-78 DATE 11 APRIL 1978

TMc/S PART NAME SAFETY & ARMING DEVICE W.O. NUMBER 245

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S DWG. NUMBER 816780 REV. E

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18 TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 9 SERIAL NO. 0014 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

DWG. NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REMARKS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 11 APRIL 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

UNIT NO. 10 SERIAL NO. 0016 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

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TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 11 SERIAL NO. 0017 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 815780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 12 SERIAL NO. 0018 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

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WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 11 APRIL 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
__ DISCREPANCY/S NOTED OF UNIT/S _____

DRW. NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
DATE 11 APRIL 1978
TMc/S PART NAME SAFETY & ARMING DEVICE
W.O. NUMBER 245
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S DWG. NUMBER 816780 REV. E
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
TMc/S PROCEDURE ATP 816780 REV. A
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 1
SERIAL NO. 0005
TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

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TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245

JOB NUMBER 4918-78 DATE 11 APRIL 1978

TMc/S PART NAME SAFETY & ARMING DEVICE W.O. NUMBER 245

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S DWG. NUMBER 816780 REV. E

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18 TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 3 SERIAL NO. 0008 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S _____

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DRW NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 4 SERIAL NO. 0009 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

CAV NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 5 SERIAL NO. 0010 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

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TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 6 SERIAL NO. 0011 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

FIGURE 4

DAV. NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
DATE 11 APRIL 1978
W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE
TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 7 SERIAL NO. 0012 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S _____

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DRAW. NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95021

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 11 APRIL 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

UNIT NO. 8 SERIAL NO. 0013 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
— DISCREPANCY/S NOTED OF UNIT/S

REV. NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978
JOB NUMBER 4918-78 W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 9 SERIAL NO. 0014 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

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FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978
JOB NUMBER 4918-78 W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 10 SERIAL NO. 0016 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

DAV NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 11 SERIAL NO. 0017 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S

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FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER LEAK TEST

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 11 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

EQUIPMENT ITEM NUMBERS 14 THRU 18

ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 12 SERIAL NO. 0018 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

AUG 1991

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER LEAK TEST

REPORT NUMBER 4918-245 DATE 11 APRIL 1978
JOB NUMBER 4918-78 W.O. NUMBER 245
TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E
CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
REMARKS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 13 SERIAL NO. 0019 TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

VERIFICATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
__ DISCREPANCY/S NOTED OF UNIT/S _____

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FIGURE 4

ELECTRICAL CHECKOUT

DATA SHEETS
UNIT NO. 2 S/N 0006
UNIT NO. 14 S/N 0020

AFTER UNIT RE-WORK

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 29 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 2 SERIAL NO. 0006 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

TEST CONDUCTED PER D.R. 37636 - DISPOSITION INSTRUCTION

B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

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FIGURE 4

FORM NO. 1191

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)
AFTER REWORK

REPORT NUMBER 4918-245 DATE 29 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 14 SERIAL NO. 0020 TEST TEMP. +70°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

TEST CONDUCTED PER D.R. 29129 - DISPOSITION INSTRUCTIONS

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER RE-WORK

TEST DATA SHEET
FOR
CIRCUITRY CHECKS

REPORT NUMBER 4918-245 DATE 29 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

REQUIREMENTS: SAFE POSITION	ARMED POSITION
A) G-H, K-N, P-R & S-T PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES	A) J-H, K-L, R-N, & T-U PIN TO PIN VOLTAGE SHALL BE LESS THAN 750 MILLIVOLTS @ 2.5 AMPERES.
B) J-H, K-L, R-N & T-U PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.	B) G-H, K-N, P-R & S-T PIN TO PIN SHOULD INDICATE AN OPEN CIRCUIT.
C) SOLENOID RESISTANCE SHALL BE 10.52-11.72 ohms	

UNIT S/N	(1)	RECORD VOLTAGE READING OR WRITE OPEN IN EACH COLUMN BELOW										SOLENOID RESISTANCE
		G-H	K-N	P-R	S-T	J-H	K-L	R-N	T-U	F-M	V-CASE	OHMS
2/ 0006	S	<.750V	→	→	→	OPEN	→	→	→	<.750V	OPEN	10.71
	A	OPEN	→	→	→	<.750V	→	→	→			
14/ 0020	S	<.750V	→	→	→	OPEN	→	→	→			11.06
	A	OPEN	→	→	→	<.750V	→	→	→			
	S	<.750V	→	→	→	OPEN	→	→	→			
	A	OPEN	→	→	→	<.750V	→	→	→			
	S	<.750V	→	→	→	OPEN	→	→	→			
	A	OPEN	→	→	→	<.750V	→	→	→			
	S	<.750V	→	→	→	OPEN	→	→	→			
	A	OPEN	→	→	→	<.750V	→	→	→			
	S	<.750V	→	→	→	OPEN	→	→	→			
	A	OPEN	→	→	→	<.750V	→	→	→			
	S	<.750V	→	→	→	OPEN	→	→	→	↓	↓	
	A	OPEN	→	→	→	<.750V	→	→	→	<.750V	OPEN	

(1) UNIT POSITION S = SAFE A = ARM

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S _____

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TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER RE-WORK

TEST DATA SHEET
FOR
INSULATION RESISTANCE

REPORT NUMBER 4918-245 DATE 29 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 2

REQUIREMENTS WITH THE ROTOR IN THE SAFE POSITION, THE INSULATION RESISTANCE BETWEEN CURRENT CARRYING PARTS AND THE CASE SHALL BE GREATER THAN 100 MEGOHMS AT 500 VDC.

S/N	MEGOHMS - PIN (SHOWN BELOW) TO CASE													UNIT NO.
	F	G	H	J	K	L	M	N	P	R	S	T	U	
0006	*	*	*	*	*	*	*	*	*	*	*	*	*	2
0020														14
	*	*	*	*	*	*	*	*	*	*	*	*	*	

* INDICATES INSULATION RESISTANCE GREATER THAN 100 MEGOHMS

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

DISCREPANCY/S NOTED OF UNIT/S

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET FOR CONTINUITY TEST

AFTER RE-WORK

REPORT NUMBER 4918-245 DATE 29 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 13

REQUIREMENTS VERIFY THAT AN OPEN CIRCUIT EXISTS BETWEEN THE CIRCUITS LISTED BELOW

UNIT NO.	RECORD OPEN CIRCUIT BY (x) SYMBOL- CIRCUIT V TO FOLLOWING CIRCUIT CONNECTIONS: A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	S/N
2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	0006
14																			0020
	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

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TEMPERATURE ELECTRICAL CHECKOUT

DATA SHEETS
UNIT NO. 2 S/N: 0006
UNIT NO. 14 S/N: 0020

AFTER UNIT RE-WORK

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER RE-WORK

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
TMc/S PART NAME SAFETY & ARMING DEVICE
CUSTOMER SPECIFICATION NASA 10A00465
TEST EQUIPMENT ITEM NUMBERS
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

DATE 29 MARCH 1978
W.O. NUMBER 245
TMc/S DWG. NUMBER 816780 REV. E
TMc/S PROCEDURE ATP 816780 REV. A

UNIT NO. 2 SERIAL NO. 0006 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
DISCREPANCY/S NOTED OF UNIT/S

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TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER RE-WORK

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
DATE 29 MARCH 1978
TMc/S PART NAME SAFETY & ARMING DEVICE
W.O. NUMBER 245
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S DWG. NUMBER 816780 REV. E
TEST EQUIPMENT ITEM NUMBERS
TMc/S PROCEDURE ATP 816780 REV. A
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 2
SERIAL NO. 0006
TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. CASH
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EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

DAV NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

AFTER RE-WORK

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

REPORT NUMBER 4918-245 DATE 29 MARCH 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY & ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 TMc/S PROCEDURE ATP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 14 THRU 18

REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 14 SERIAL NO. 0020 TEST TEMP. +165°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
		X				X				X	
			X				X				X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

XX ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

__ DISCREPANCY/S NOTED OF UNIT/S

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FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
OPERATIONAL (90° ROTATION)

AFTER RE-WORK

REPORT NUMBER 4918-245
JOB NUMBER 4918-78
DATE 29 MARCH 1978
TMc/S PART NAME SAFETY & ARMING DEVICE
W.O. NUMBER 245
CUSTOMER SPECIFICATION NASA 10A00465
TMc/S DWG. NUMBER 816780 REV. E
TEST EQUIPMENT ITEM NUMBERS 14 THRU 18
TMc/S PROCEDURE ATP 816780 REV. A
REQUIREMENTS ELAPSED TIME FOR 90 DEGREE ROTATION SHALL NOT EXCEED 250 MILLISECONDS.

UNIT NO. 14
SERIAL NO. 0020
TEST TEMP. +20°F

32 VOLTS DC				28 VOLTS DC				24 VOLTS DC			
AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM	AMPS	TIME (SEC.)	SAFE	ARM
<3.0	<.250		X	<3.0	<.250		X	<3.0	<.250		X
<3.0	<.250	X		<3.0	<.250	X		<3.0	<.250	X	

B. CASH
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

X ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS
☐ DISCREPANCY/S NOTED OF UNIT/S

FORM NO. 1191

FIGURE 4

TELEDYNE McCORMICK SELPH
HOLLISTER, CALIFORNIA 95023

TEST DATA SHEET
FOR
LOW AND HIGH TEMPERATURE FUNCTION

REPORT NUMBER 4918-245 DATE 13 APRIL 1978

JOB NUMBER 4918-78 W.O. NUMBER 245

TMc/S PART NAME SAFETY AND ARMING DEVICE TMc/S DWG. NUMBER 816780 REV. E

CUSTOMER SPECIFICATION NASA 10A00465 REV. C TMc/S PROCEDURE QTP 816780 REV. A

TEST EQUIPMENT ITEM NUMBERS 4, 6, 19, 20 & 21

REQUIREMENTS ARMED POSITION - THE ALUMINUM SLEEVE ON EACH CDF TEST LEAD ASSY, SHALL BE COMPLETELY RUPTURED TO INDICATE SATISFACTORY OPERATION OF THE TEST SPECIMEN - "SAFE" POSITION - THERE SHALL BE NO FRAGMENTATION OF THE S & A BODY OR ROTOR. SATISFACTORY OPERATION SHALL BE INDICATED BY NO CHEMICAL DECOMPOSITION OF THE TEST LEAD EXPLOSIVE.

UNIT NO.	SERIAL NO.	TEMPERATURE	POSITION		TEST RESULTS
			ARMED	SAFE	
1	0005	+20°F	X		MET REQUIREMENTS
2	0006	+20°F	X		MET REQUIREMENTS
3	0008	+20°F	X		MET REQUIREMENTS
4	0009	+20°F		X	MET REQUIREMENTS
5	0010	+20°F		X	MET REQUIREMENTS
6	0011	+165°F	X		MET REQUIREMENTS
7	0012	+165°F	X		MET REQUIREMENTS
8	0013	+165°F	X		MET REQUIREMENTS
9	0014	+165°F		X	MET REQUIREMENTS
10	0016	+165°F		X	MET REQUIREMENTS
11	0017	+165°F	X		MET REQUIREMENTS
12	0018	+165°F	X		MET REQUIREMENTS
13	0019	+20°F	X		MET REQUIREMENTS
14	0020	+20°F	X		MET REQUIREMENTS

B. Cash
TECHNICIAN

B. Purinton
WITNESS

EVALUATION OF TEST RESULTS (CHECK ONE)

☒ ABOVE TESTS CONDUCTED WITHOUT ADVERSE EFFECTS

☐ DISCREPANCY/S NOTED OF UNIT/S _____

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APPENDIX A

REPORT OF
QUALIFICATION VIBRATION AND SHOCK TESTS
BY
APPROVED ENGINEERING TEST LABORATORIES

TEST REPORT NO. 773-2612-3

(TOTAL NUMBER OF PAGES - 241)

AETL

APPROVED ENGINEERING TEST LABORATORIES / 1536 EAST VALENCIA / FULLERTON, CALIFORNIA 92631 / TEL. (714) 879-6110

A NATIONAL TECHNICAL SERVICES COMPANY

Test Report No. 773-2612-3

REPORT OF QUALIFICATION VIBRATION AND SHOCK TESTS PERFORMED ON SAFETY AND ARMING DEVICE (S&A) TMc/S PART NO. 816780

PERFORMED FOR

TELEDYNE McCORMICK-SELPH
3601 UNION ROAD
HOLLISTER, CALIFORNIA 95023

PERFORMED BY

APPROVED ENGINEERING TEST LABORATORIES
1536 EAST VALENCIA DRIVE
FULLERTON, CALIFORNIA 92631

MAY 1978

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CALIFORNIA TEST LABS DIV. / 1432 POTRERO AVE. / SO. EL MONTE, CA 91733 / (213) 283-8465
SO. EL MONTE DIV. / 1431 POTRERO AVENUE / SO. EL MONTE, CALIFORNIA 91733 / (213) 444-9511

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ADMINISTRATIVE DATA

DATE: 4 May 1978

1. PURPOSE: To perform Qualification Vibration and Shock Tests in accordance with the specifications cited below.

2. MANUFACTURER: Teledyne McCormick Selph (TMc/S)

3. MANUFACTURER'S PART NO.: 816780

4. DESCRIPTION OF TEST ITEM: Safety And Arming Device (S&A)

5. REFERENCES:
   1. TMc/S Purchase Order No. 96064RR, Items 2, 3, and 4.
   2. TMc/S QTP 816780, Revision A
   3. MIL-STD-810C
   4. MIL-C-45662A, Calibration System Requirements
   5. MIL-I-45208A, Inspection System Requirements

6. QUANTITY OF ITEMS TESTED: 14 Items were tested:

Serial No.	Unit No.
0005	1
0006	2
0008	3
0009	4
0010	5
0011	6
0012	7
0013	8
0014	9
0016	10
0017	11
0018	12
0019	13
0020	14

7. SECURITY CLASSIFICATION: Unclassified

8. DATE TESTS COMPLETED: 3-17-78

ADMINISTRATIVE DATA

9. TESTS CONDUCTED BY: Approved Engineering Test Laboratories, Fullerton Division

10. DISPOSITION OF TEST ITEMS: Returned to: Teledyne McCormick-Selph
3601 Union Road
Hollister, CA 95023

11. ABSTRACT:

Test No.	Page No.	Test	QTP Para.	Results
1	5	Vibration (Units 1 thru 14)	5.3 & 5.4	No Anomalies
2	11	Ordance Shock (Units 9 thru 14)	5.5	Note 1
3	15	SRB Water Landing and	5.5	No Anomalies
4	15	SRB Parachute Deployment (Units 9 thru 13)		No Anomalies

Note 1: Unit No. 14 (S/N 0020) failed to operate properly after the Mission 1 series of shocks in the first (Y) axis and was removed from the test program.

19 APPENDIX 1 - Description of Test Apparatus

23 APPENDIX 2 - Photographs

27 APPENDIX 3 - Test Data

12. STANDARD TEST CONDITIONS: Room ambient, unless otherwise noted.

13. SOURCE INSPECTION: TMc/S, DCAS QAR, and AETL QA

14. PURCHASE ORDER NUMBER: 96064RR

15. GOVERNMENT CONTRACT NO.: NAS8-31973

FACTUAL DATA

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1.0 VIBRATION TESTS

1.1 INSTALLATION

1.1.1 The test items were installed on flat plate fixtures per Figure 1 of the QTP. The fixtures were bolted to a cube-type intermediate fixture on the head of the vibration machine as illustrated in Photograph No. 1.

1.1.2 Two units were vibrated together, as shown in the photograph in the longitudinal and one lateral axis; the tests in the third axis were conducted with a single unit and flat plate mounted on the top of the cube.

1.1.3 The control accelerometer was mounted on the top of the cube. A monitor accelerometer was affixed to a test item in the axis of vibration.

1.2 TEST ITEM OPERATION & MONITORING

1.2.1 All operation and monitoring of the test items were performed by a TMc/S representative with TMc/S equipment. A complete vibration setup with monitoring apparatus is shown in Photograph No. 2.

1.2.2 The test items were set in the ARMED position for sinusoidal vibration, random vibration at the lift-off level, and random vibration at the boost level. The test items were set in the SAFE position for the re-entry random vibration. The switch position was continually monitored during all of the vibration.

1.2.3 At the conclusion of each phase of the vibration (sine and random/axis/level/mission), each test item was cycled from ARM to SAFE to ARM or SAFE to ARM to SAFE, as applicable, at 28 VDC. The 90° rotation time and actuation current were monitored in each operation.

FACTUAL DATA

1.3 TEST SEQUENCE

The vibration test sequence is shown in Table I.

1.4 TEST CONDITIONS

All tests were conducted at laboratory ambient conditions.

1.5 SINUSOIDAL VIBRATION

1.5.1 Each unit was subjected to one sinusoidal frequency scan from 5 to 40 Hz at a scan rate of 3 octaves/minute at the following levels:

± 1.0 g from 5 to 10 Hz
± 1.7 g from 10 to 40 Hz

1.5.2 The output of the response accelerometer was recorded on an X-Y recorder, frequency versus ± g in each scan.

FACTUAL DATA

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Table I

Vibration Test Sequence Chart

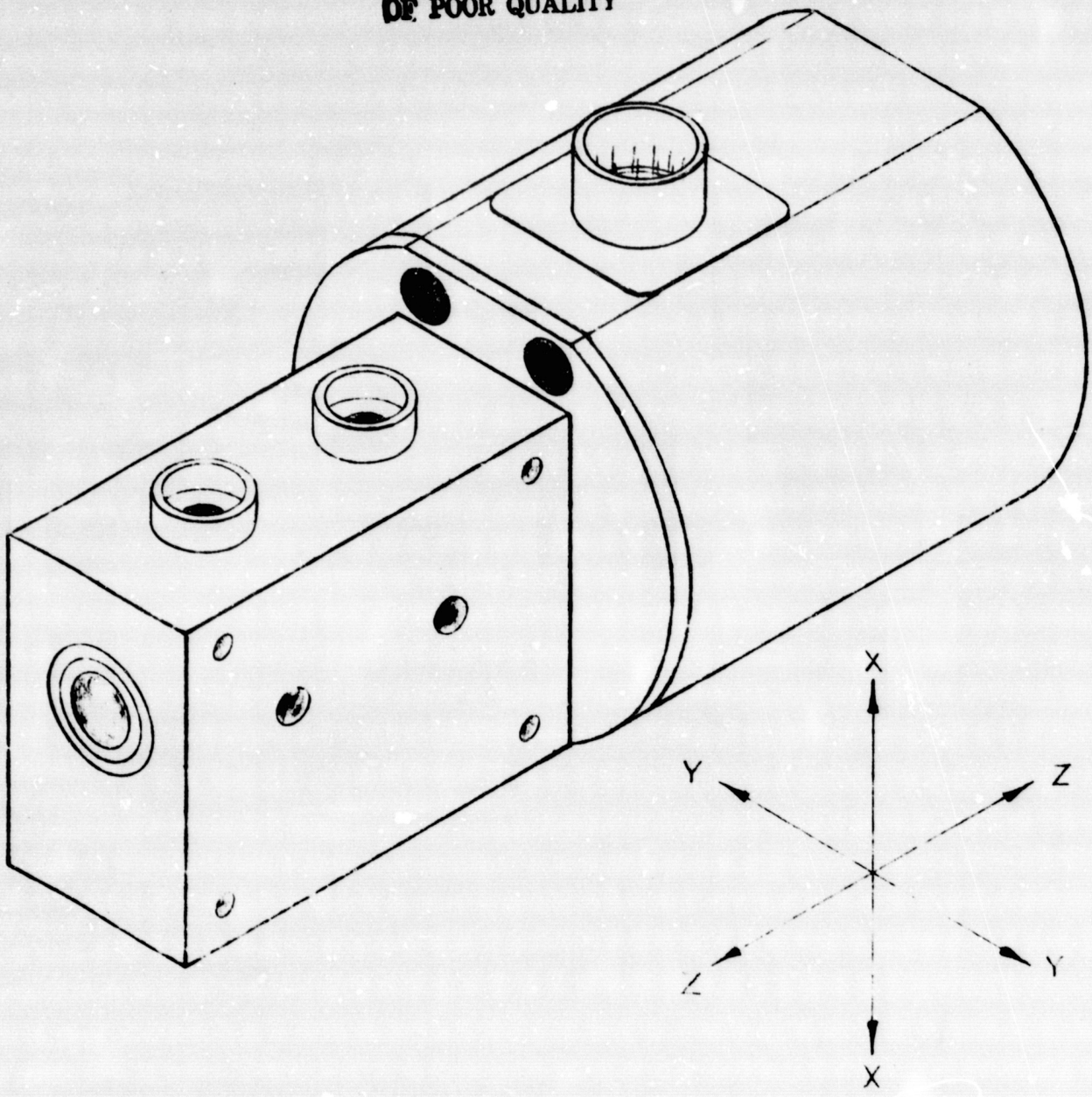
Units 1 - 10 S/N's 0005, 6 8, 9, 10, 11, 12, 13, 14, 16	Units 11 & 12 S/N's 0017 & 0018	Units 13 & 14 S/N's 0019 & 0020
Y Axis Sine	Y Axis Sine	Y Axis Sine
Y Axis LO 1	Y Axis LO 1 & 2	Y Axis LO 1,2,3
X Axis Sine	X Axis Sine	X Axis Sine
X Axis LO 1	X Axis LO 1 & 2	X Axis LO 1,2,3
Z Axis Sine	Z Axis Sine	Z Axis Sine
Z Axis LO 1	Z Axis LO 1 & 2	Z Axis LO 1,2,3
Y Axis B 1	Y Axis B 1 & 2	Y Axis B 1,2,3
X Axis B 1	X Axis B 1 & 2	X Axis B 1,2,3
Z Axis B 1	Z Axis B 1 & 2	Z Axis B 1,2,3
Y Axis RE 1	Y Axis RE 1 & 2	Y Axis RE 1,2,3
X Axis RE 1	X Axis RE 1 & 2	X Axis RE 1,2,3
Z Axis RE 1	Z Axis RE 1 & 2	Z Axis RE 1,2,3

LO = Lift Off Random Vibration
B = Boost Random Vibration
RE = Reentry Random Vibration
Numbers = Missions, 1 = Mission 1
2 = Missions 2 thru 6
3 = Missions 7 thru 10

Test Axes = Z = Longitudinal
X = Lateral through the Connectors
Y = Lateral, normal to the connector axis

See sheet 7(a) for orientation of axis for all tests.

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ORIENTATION OF AXIS FOR ALL DYNAMIC TESTING

FACTUAL DATA

1.6 RANDOM EQUALIZATION

Prior to each phase of the vibration in each axis (or axes) the vibration system, including the fixture configuration but without any test items mounted, was equalized at the specified levels. Test tolerances were per MIL-STD-810C and the QTP as follows:

± 1.5 db from 20 to 500 Hz
+ 3 db, -1.5 db from 500 to 2000 Hz
± 10% on the composite GRMS

1.7 RANDOM VIBRATION

The test items were subjected to the random vibration in accordance with the following spectrums for the durations noted in the sequences shown in Table I.

1.7.1 Lift Off Vibration

Y Axis (Armed Position)

Frequency (Hz)	PSD Level
20	0.075 g^2/Hz
20 - 40	+3 db/oct.
40 - 54	0.15 g^2/Hz
54 - 100	+9 db/oct.
100 - 170	0.95 g^2/Hz
170 - 2000	-3 db/oct.
2000	0.082 g^2/Hz

Composite - 22.0 grms

X and Z Axes (Armed Position)

Frequency (Hz)	PSD Level
20	0.040 g^2/Hz
20 - 40	+3 db/oct.
40 - 280	0.08 g^2/Hz
280 - 400	+6 db/oct.
400 - 800	0.16 g^2/Hz
800 - 2000	-6 db/oct.
2000	0.026 g^2/Hz

Composite - 13.0 grms

Duration: 60 seconds for Mission 1, 50 seconds for Mission 2-6, 40 seconds for Mission 7-10.

FACTUAL DATA

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1.7.2 Boost Random Vibration

Y Axis (Armed Position)

Frequency (Hz)	PSD Level
20	0.19 g^2/Hz
20 - 40	+3 db/oct.
40 - 54	0.28 g^2/Hz
54 - 100	+6 db/oct.
100 - 170	1.0 g^2/Hz
170 - 2000	-3 db/oct.
2000	0.09 g^2/Hz

Composite = 22.6 grms

X and Z Axis (Armed Position)

Frequency (Hz)	PSD Level
20	0.040 g^2/Hz
20 - 50	+3 db/oct.
50 - 135	0.080 g^2/Hz
135 - 250	+3 db/oct.
250 - 440	0.15 g^2/Hz
440 - 500	+9 db/oct.
500 - 1100	0.22 g^2/Hz
1100 - 2000	-6 db/oct.
2000	0.067 g^2/Hz

Composite = 27.4 grms

Durations: 120 seconds for Mission 1, 200 seconds for Missions 2-6, and 160 seconds for Missions 7-10.

1.7.3 Reentry Random Vibration

Y Axis (Safe Position)

Frequency (Hz)	PSD Level
20	0.50 g^2/Hz
20 - 40	+3 db/oct.
40 - 60	1.00 g^2/Hz
60 - 75	-12 db/oct.
75 - 230	0.36 g^2/Hz
230 - 500	-12 db/oct.
500 - 1000	0.017 g^2/Hz
1000 - 2000	-6 db/oct.
2000	0.0042 g^2/Hz

Composite 11.9 grms

X And Z Axes (Safe Position)

Frequency (Hz)	PSD Level
20 - 40	0.75 g^2/Hz
40 - 60	-12 db/oct.
60 - 400	0.13 g^2/Hz
400 - 2000	-3 db/oct.
2000	0.026 g^2/Hz

Composite 12.2 grms

Durations: 90 seconds for Mission 1, 150 seconds for Mission 2-6, and 120 seconds for Missions 7-10. All functional data were retained by the TMc/S representative.

FACTUAL DATA

1.7.4 Data Recording

An X-Y Recording of the control accelerometer output was made during each equalization and during the vibration of each unit(s) in each axis at each level. In addition one typical recording of the response accelerometer output was made during the test on one unit (S/N 0005) in each axis at each level.

1.7.5 Visual Examination

At the conclusion of the vibration in each axis at each level, the test items were visually examined for evidence of structural or mechanical damage.

1.8 RESULTS

There was no reported anomaly during the tests and no visible evidence of damage resulting from the vibration.

1.9 DESCRIPTION OF TEST APPARATUS

See Appendix 1.

1.10 PHOTOGRAPHS

See Appendix 2.

1.11 TEST DATA

Vibration data are included in Appendix 3.

FACTUAL DATA

2.0 ORDNANCE SHOCK TEST

2.1 INSTALLATION

The test installation was the same as in the Vibration Tests, described in paragraph 1.1 above.

2.2 TEST ITEM OPERATION AND MONITORING

2.2.1 All operation and monitoring of the test items were performed by a TMc/S representative with TMc/S equipment.

2.2.2 The test items were set in the SAFE position and monitored for position change during the shocks.

2.2.3 Following the shocks in each axis in each mission the units were cycled from SAFE to ARMED to SAFE, and the 90° actuation time and actuation current were monitored.

2.3 TEST SEQUENCE

The tests were conducted in the sequence shown in Table II.

2.4 TEST CONDITIONS

The tests were conducted at standard laboratory ambient conditions.

FACTUAL DATA

Table II

Ordnance Shock Sequence

Units 9 & 10 S/N's 0014 & 0016

Axis	Shocks	Mission
Z	2	1
X	2	1
Y	2	1

Units 11 & 12 S/N's 0017 & 0018

Axis	Shocks	Mission
Y	2	1
Y	10	2-6
X	2	1
X	10	2-6
Z	2	1
Z	10	2-6

Unit No. 13 S/N 0019

Axis	Shocks	Mission
Z	2	1
Z	10	2-6
Z	8	7-10
X	2	1
X	10	2-6
X	8	7-10
Y	2	1
Y	10	2-6
Y	8	7-10

Unit No. 14 S/N 0020

Y-Axis Mission - The test item failed to operate after these shocks and was removed from the test program.

Test Axes:
X = Longitudinal
Z = Lateral through the Connectors
Y = Lateral, normal to the Connector axis

FACTUAL DATA

2.5 CALIBRATION AND EQUALIZATION

The vibration system was calibrated and equalized to produce and record the specified spectrum shock as follows:

Frequency (Hz)	Level
50 to 100	+12 db/octave increase
100	94 g peak
100 to 4000	+6 db/octave increase
4000 to 10,000	1875 g peak

Tolerances = ±6 db (+100%, -50%)

2.6 SHOCKS

Each test item was subjected to the specified number of bi-directional pyrotechnic shocks in each axis in accordance with the sequence shown in Table II.

2.7 DATA RECORDING

The equalizations and each shock was analyzed in the maxi-max mode and recorded on an X-Y recorder, peak g-level versus frequency.

2.8 VISUAL EXAMINATION

Following the shocks in each axis for each mission sequence, the test items were visually examined for structural or mechanical damage.

FACTUAL DATA

2.9 RESULTS

2.9.1 Unit No. 14 (S/N 0020) failed to operate properly following the two shocks in the first axis (Y); testing was stopped, and the unit was removed from the test program by the TMc/S representative. No other functional anomalies were reported.

2.9.2 There was no visible evidence of physical damage resulting from the spectrum shocks.

2.10 DESCRIPTION OF TEST APPARATUS

See Appendix 1.

2.11 PHOTOGRAPHS

See Appendix 2, Photographs No. 1 and 2 for a typical test setup.

2.12 TEST DATA

Data Sheets and X-Y recordings are included in Appendix 3.

FACTUAL DATA

3.0 SRB WATER LANDING AND PARACHUTE DEPLOYMENT SHOCK

3.1 INSTALLATION

The test items were installed on flat plate fixtures per Figure 1 of the QTP. The fixtures were bolted to a special test fixture rigidly attached to a shock machine, as shown in Photograph No. 3. One, two or three units were mounted on the fixture configuration as practical for the tests.

3.2 CALIBRATION

3.2.1 The monitoring instrumentation was calibrated as a system prior to the test.

3.2.2 The shock machine was calibrated for each specific shock as shown below.

SRB Water Landing

Longitudinal Axis	Lateral Axes
Half Sine Pulse	Half Sine Pulse
30 G's Peak Amplitude	20 G's Peak Amplitude
150 msec duration	100 msec duration

SRB Parachute Deployment

Longitudinal Axis	Lateral Axes
Half Sine Pulse	Half Sine Pulse
6 G's Peak Amplitude	11 G's Peak Amplitude
300 msec duration	300 msec duration

The calibration of the shock machine was then checked at each level when the configuration was changed.

FACTUAL DATA

3.3 TEST ITEM OPERATION AND MONITORING

3.3.1 All operation and monitoring of the test items were performed by a TMc/S representative with TMc/S equipment.

3.3.2 The test items were set in the SAFE position and monitored for position change during the shocks.

3.3.3 Following the shocks in each axis in each mission the units were cycled from SAFE to ARMED to SAFE, and the 90° actuation time and actuation current were monitored.

3.4 TEST SEQUENCE

The test sequence is shown in Table III.

3.5 SHOCKS

Each test item was subjected to the specified shocks in accordance with the sequence chart.

3.6 DATA RECORDING

The accelerometer output was recorded on an oscillograph recorder, amplitude and duration as follows:

Mission 1	-	Each Shock
Mission 2 - 6	-	First, 5th and 10th Shocks
Mission 7 - 10	-	First, 4th and 8th Shocks

3.8 VISUAL EXAMINATION

Following the shocks in each axis for each mission sequence, the test items were visually examined for structural or mechanical damage.

3.8 RESULTS

There was no reported anomaly during and following the shocks, and no visible evidence of physical damage resulting from the shocks.

FACTUAL DATA

Table III

SRB Water Landing And Parachute Deployment Shock Sequence

Units 9 & 10 S/N's 0014 & 0016				Units 11 & 12 S/N's 0017 & 0018				Unit No. 13 S/N 0019			
Axis	Shocks	Type & Mission		Axis	Shocks	Type & Mission		Axis	Shocks	Type & Mission	
X	2	1	WL	X	2	1	WL --	X	2	1	WL
Y	2	1	WL	Y	2	1	WL --	Y	2	1	WL
Z	2	1	WL	Z	2	1	WL --	Z	2	1	WL
X	2	1	PD	X	2	1	PD --	X	2	1	PD
Y	2	1	PD	Y	2	1	PD --	Y	2	1	PD
Z	2	1	PD	Z	2	1	PD --	Z	2	1	PD
				X	10	2-6	WL --	X	10	2-6	WL
				Y	10	2-6	WL --	Y	10	2-6	WL
				Z	10	2-6	WL --	Z	10	2-6	WL
				X	10	2-6	PD --	X	10	2-6	PD
				Y	10	2-6	PD --	Y	10	2-6	PD
				Z	10	2-6	PD --	Z	10	2-6	PD
								Z	8	7-10	WL
								Y	8	7-10	WL
								X	8	7-10	WL
								X	8	7-10	PD
								Y	8	7-10	PD
								Z	8	7-10	PD

-- = Units tested together

Test Axes: Z = Longitudinal
X = Lateral through the Connectors
Y = Lateral normal to the Connector axis

3.9 DISPOSITION

The test items were returned to TMc/S for post-leakage tests and final evaluation.

3.10 DESCRIPTION OF TEST APPARATUS

See Appendix 1.

FACTUAL DATA

3.11 PHOTOGRAPH

See Appendix 2.

3.12 TEST DATA

A data sheet and typical oscillograph recordings are reproduced in Appendix 3.

APPENDIX 1

Description of Test Apparatus

All quantitative test measurements were made with certified accurate instruments in current calibration, and all instruments used had a valid calibration sticker attached. All instruments were calibrated in accordance with MIL-C-45662A and MIL-Q-9858A. A list of the test apparatus follows:

Description	Apparatus	Calibration
SINE VIBRATION	Minerva Stop Watch, AETL Control No. G-4121-F	12 months Due 10-25-78
	Bruel & Kjaer Automatic Exciter Control, Model 1019, AETL Control No. D-4029-F	12 months Due 7-21-78
	Bruel & Kjaer Accelerometer, Model 2226C, AETL Control No. D-4323-F	6 months Due 4-5-78
	Ling Accelerometer Normalizing Amplifier, Model ANA-100, AETL Control No. D-4012-F	6 months Due 7-5-78
	Esterline Angus X-Y Recorder, Model 575, AETL Control No. D-4126-F	6 months Due 8-21-78
	MB Log Converter, Model N165, AETL Control No. D-4128-F	6 months Due 4-25-78
	Ling Vibration Exciter, Model A300, AETL Control No. D-4001-F	Not Required
	Ling Vibration Amplifier, Model PP20/20, AETL Control No. D-4000-F	Not Required

APPENDIX 1

Description of Test Apparatus

Description	Apparatus	Calibration
RANDOM VIBRATION	Minerva Stop Watch, AETL Control No. G-4121-F	12 months Due 10-25-78
	Ling ASDE-80 Equalizer-Analyzer, AETL Control No. D-4085-F	6 months Due 8-21-78
	Ling Accelerometer Normalizing Amplifier, Model ANA-100, AETL Control No. D-4012-F	6 months Due 7-5-78
	Bruel & Kjaer Accelerometer, Model 4329, AETL Control No. D-4114-F	12 months Due 7-21-78
	Bruel & Kjaer Accelerometer, Model 2226C, AETL Control No. D-4323-F	6 months Due 4-5-78
	Ballantine RMS Meter, Model 320, AETL Control No. D-4129-F	6 months Due 4-24-78
	Spectral Dynamics Real Time Analyzer, Model SD330, AETL Control No. D-4125-F	6 months Due 7-23-78
	Esterline Angus X-Y Recorder, Model 575, AETL Control No. D-4080-F	6 months Due 8-28-78
	Ling Vibration Exciter, Model A300, AETL Control No. D-4001-F	Not Required
	Ling Vibration Amplifier, Model PP20/20, AETL Control No. D-4000-F	Not Required

APPENDIX 1

Description of Test Apparatus

Description	Apparatus	Calibration
SHOCK SPECTRA	Bruel & Kjaer Instruments Spectrum Shaper, Model 123, AETL Control No. D-4074-F	Not Required
	Spectral Dynamics Spectrum Analyzer, Model SD320, AETL Control No. 3174	6 months Due 8-21-78
	Endevco Accelerometer, Model 2225, AETL Control No. D-4257-F	6 months Due 3-14-79
	Ling Accelerometer Normalizing Amplifier, Model ANA-100, AETL Control No. D-4012-F	6 months Due 7-5-78
	Esterline Angus X-Y Recorder, Model 575, AETL Control No. D-4126-F	6 months Due 8-21-78
	Ling Vibration Exciter, Model A300, AETL Control No. D-4001-F	Not Required
	Ling Vibration Amplifier, Model PP20/20, AETL Control No. D-4000-F	Not Required

APPENDIX 1

Description of Test Apparatus

Description	Apparatus	Calibration
WATER LANDING & PARACHUTE DEPLOYMENT SHOCK	Statham A5A-100-350 Accelerometer, 0 to 100 g, Serial No. 1475, AETL Control No. D-904-S	Prior to Test*
	CEC 5-124 Oscillograph Recorder, AETL Control No. E-4302-F	Prior to Test*
	CEC Carrier Amplifier, Type 1-118, AETL Control No. E-4303-F	12 months* Due 5-3-78
	Tektronix 180-S1 Time Mark Generator, AETL Control No. E-4226-F	12 months Due 5-1-78

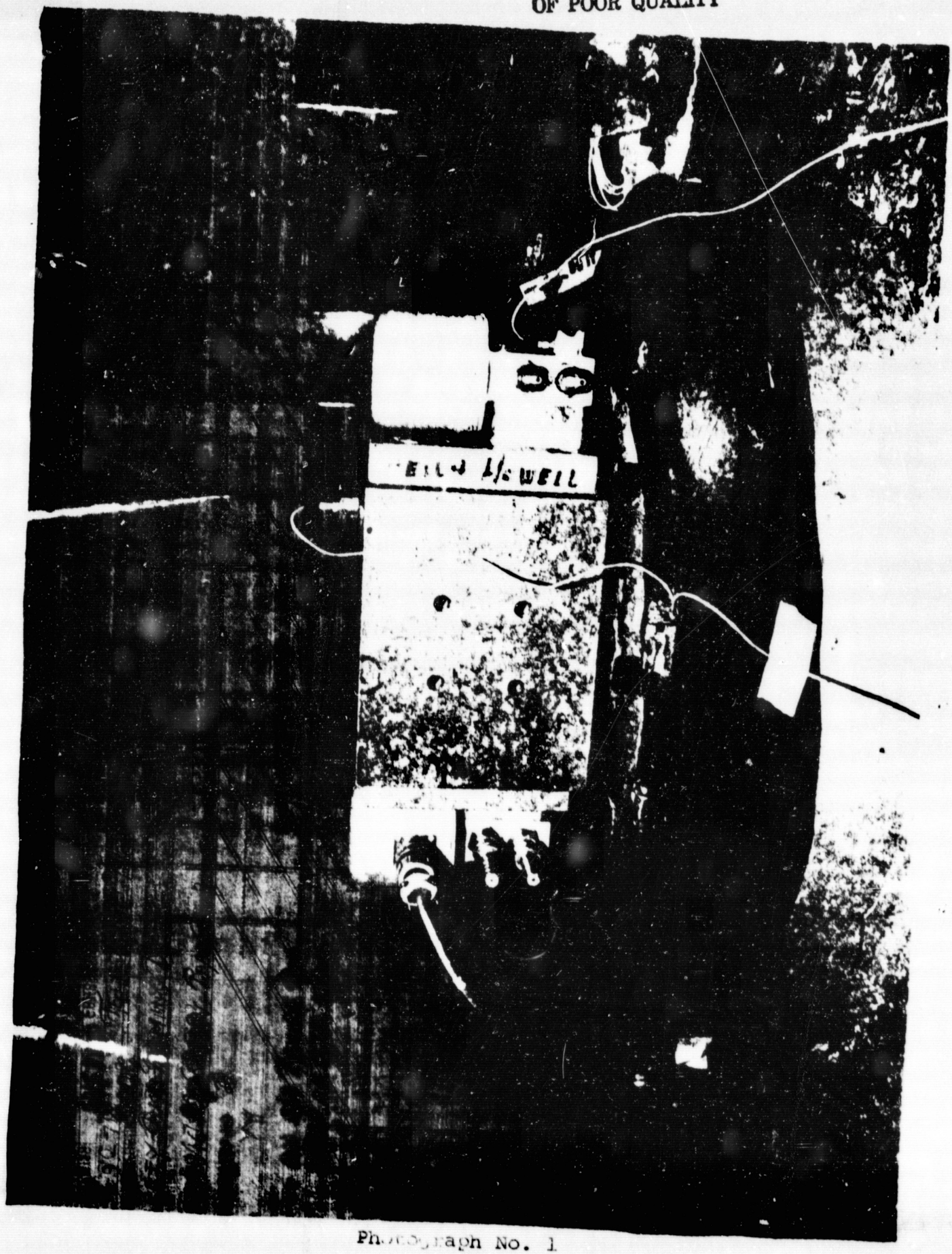
*Calibrated as a system prior to test.

APPENDIX 2

Photographs

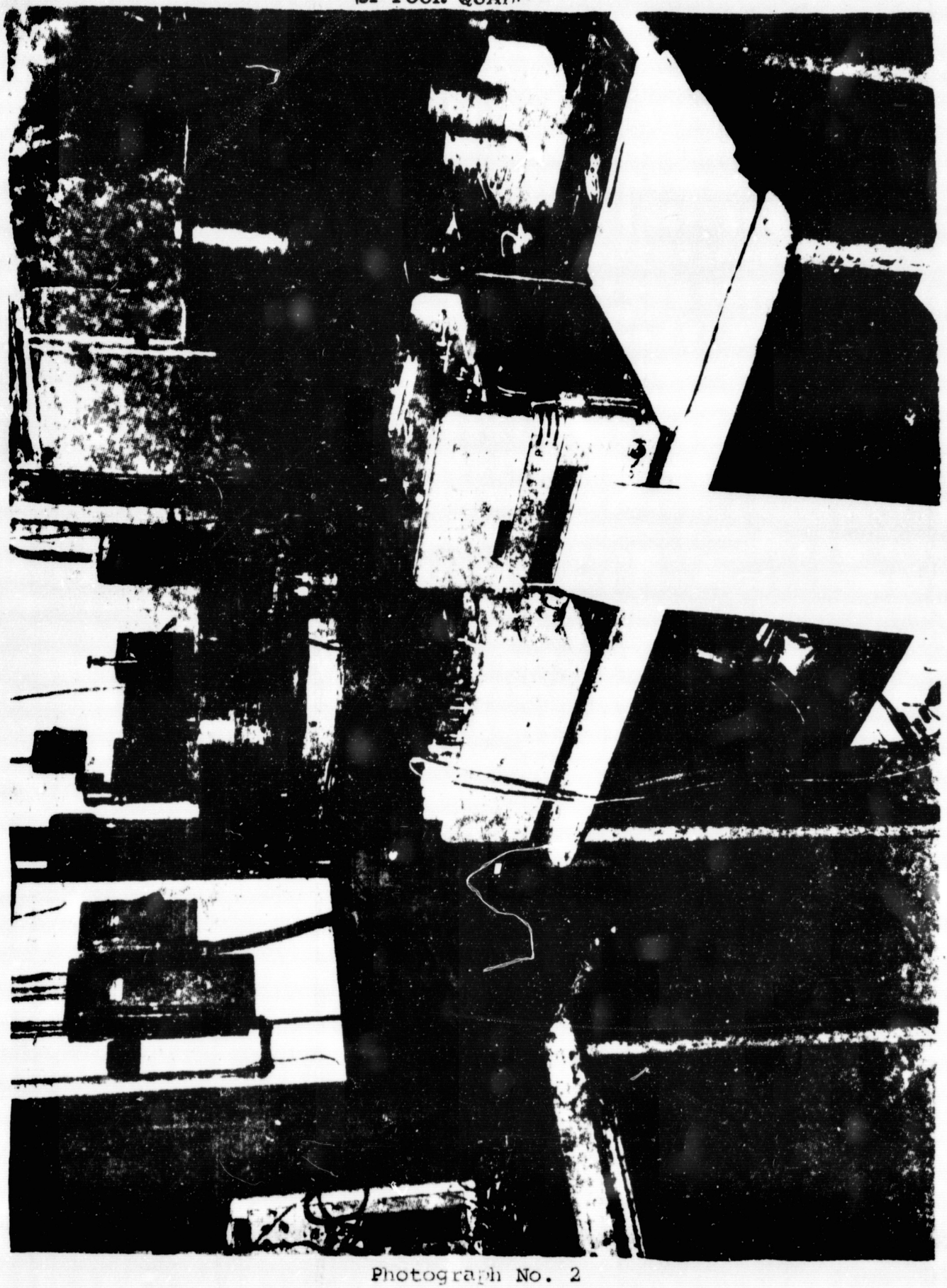
No. 1 & 2	Typical Vibration and Ordnance Shock Test Setups
No. 3	Typical Water Landing and Parachute Deployment Shock Test Setup

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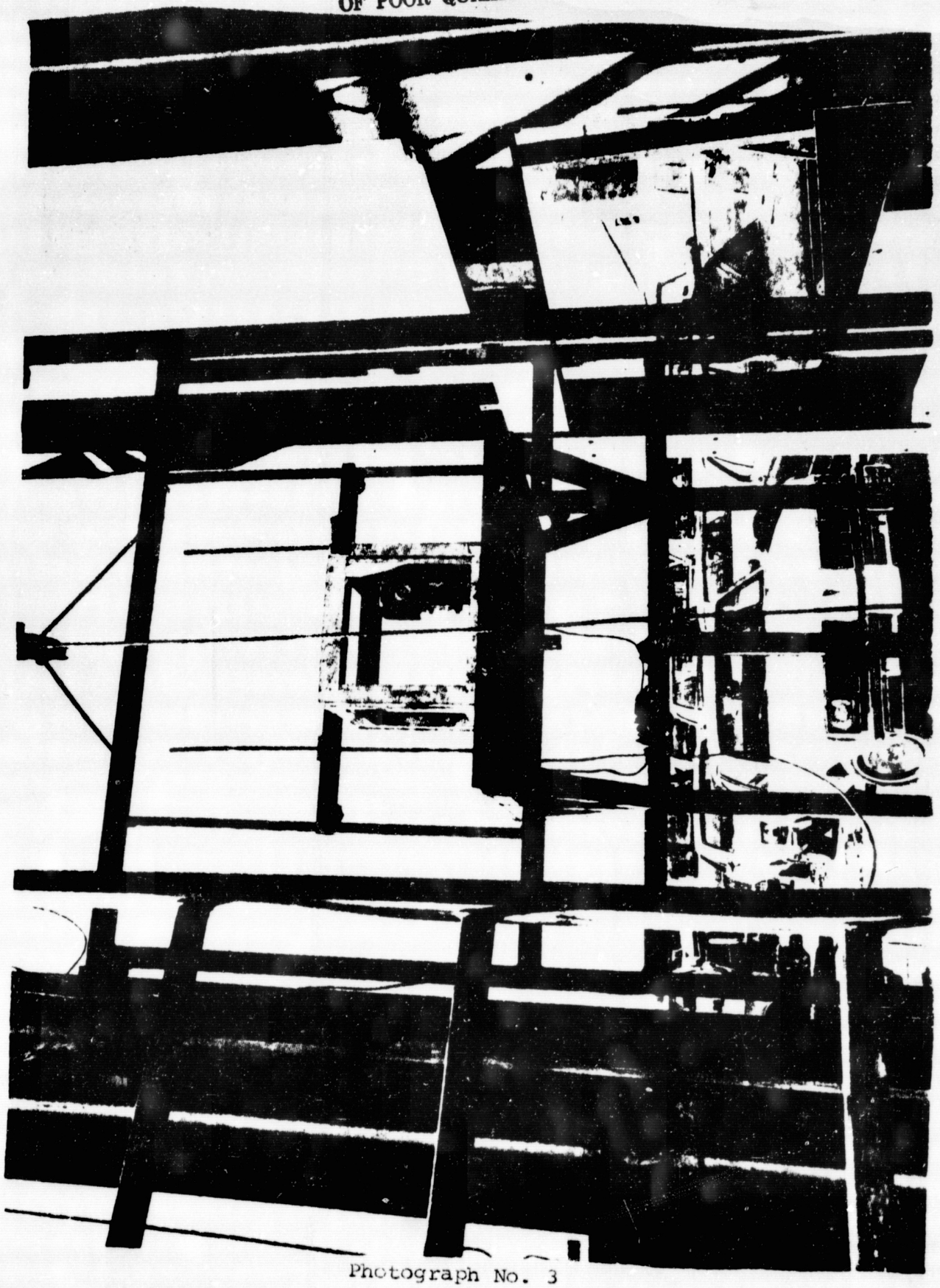
Photograph No. 1

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Photograph No. 2

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OF POOR QUALITY



Photograph No. 3

APPENDIX 3

Test Data

Description	Page(s)
Sinusoidal Vibration	28 thru 57
Random Vibration	58 thru 200
Ordnance (Spectrum) Shock	201 thru 227
Notice of Deviation	203
Water Landing and Parachute Deployment Shock (Typical Shocks) - The remainder of the recordings will be retained on file at AETL.	228 thru 240

APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.
NTS

AETL VIBRATION DATA

Date Started: 3-9-78
Date Completed: 3-9-78
Customer: TELEDYNE MC CORMICK SELPH
Test: Sine
Specimen Part No.: 816780
Specimen Description: SAFETY AND ARMING DEVICE
Specification: QTP 816780 REV. A, PARA. 5.3
M.J.O.: 773-2610
Performed By: G.W. CAYER
Test Engineer: G. MATTESON
Witnessed By:

Day	Hour	Temperature °F	Frequency Hz	Displacement D.A. Inch	Acceleration G's Pk	Axis Noted	Sweep Rate OCT/MIN	Duration Min.	Test Sequence Noted	Resonant Frequency Hz	Output Resonant Acceleration G's Pk	Specimen Serial No. Noted	Remarks Units
3-9-78	0930	AMB	5-10	—	1.0	Y	3	1	1	PLOT #1		0005	START SWEEP
			10-40	—	1.7								
	0945		SAME AS ABOVE			Y	3	1	2	PLOT #2		0006	START SWEEP
	0954		SAME AS ABOVE			Y	3	1	3	PLOT #3		0008	START SWEEP
	1018		SAME AS ABOVE			Y	3	1	4	PLOT #4		0009	START SWEEP
	1029		SAME AS ABOVE			Y	3	1	5	PLOT #5		0010	START SWEEP
	1038		SAME AS ABOVE			Y	3	1	6	PLOT #6		0011	START SWEEP
	1049		SAME AS ABOVE			Y	3	1	7	PLOT #7		0012	START SWEEP
	1059		SAME AS ABOVE			Y	3	1	8	PLOT #8		0013	START SWEEP
	1109		SAME AS ABOVE			Y	3	1	9	PLOT #9		0014	START SWEEP
	1120		SAME AS ABOVE			Y	3	1	10	PLOT #10		0016	START SWEEP
	1132		SAME AS ABOVE			Y	3	1	11	PLOT #11		0017	START SWEEP
	1146		SAME AS ABOVE			Y	3	1	12	PLOT #12		0018	START SWEEP
	1232		SAME AS ABOVE			Y	3	1	13	PLOT #13		0019	START SWEEP
	1252		SAME AS ABOVE			Y	3	1	14	PLOT #14		0020	START SWEEP
	1357		SAME AS ABOVE			X	3	1	15	PLOT #15		0005/0006	START SWEEP
	1419		SAME AS ABOVE			X	3	1	16	PLOT #16		0008/0009	START SWEEP
	1432		SAME AS ABOVE			X	3	1	17	PLOT #17		0010/0011	START SWEEP
	1452		SAME AS ABOVE			X	3	1	18	PLOT #18		0012/0013	START SWEEP
	1515		SAME AS ABOVE			X	3	1	19	PLOT #19		0014/0016	START SWEEP
	1527		SAME AS ABOVE			X	3	1	20	PLOT #20		0017/0018	START SWEEP
3-9-78	1543	AMB	SAME AS ABOVE			X	3	1	21	PLOT #21		0019/0020	START SWEEP

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APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.

AETL VIBRATION DATA

Date Started: 3-9-78
Date Completed: 3-10-78
Customer: TELEDYNE MC CORMICK SELPH
Test: Sine
M.J.O.: 773-2610
Specimen Description: SAFETY AND ARMING DEVICE
Specimen Part No.: 816780
Performed By: G.W. CAYER
Specification: QTP 816780 REV. 'A', PARA. 5.3
Test Engineer: G. MATTESON
Witnessed By: AETL JJ CC

Day	Hour	°F	Hz	Inch	G's Pk	Noted	OCT/MIN	Min.	Noted	Hz	G's Pk		Noted	Units / Remarks
3-9-78	1608	AMB	5-10	—	1.0	Z	3.0	1	22	PLOT #22			0005/0006	START SWEEP
↓	1620		10-40	—	1.7									
			SAME AS ABOVE			Z	3	1	23	PLOT #23			0008/0009	START SWEEP
3-9-78	1635		SAME AS ABOVE			Z	3	1	24	PLOT #24			0010/0011	START SWEEP
3-10-78	0840		SAME AS ABOVE			Z	3	1	25	PLOT #25			0012/0013	START SWEEP
↓	0900		SAME AS ABOVE			Z	3	1	26	PLOT #26			0014/0016	START SWEEP
↓	0915	↓	SAME AS ABOVE			Z	3	1	27	PLOT #27			0017/0018	START SWEEP
3-10-78	0931	AMB	SAME AS ABOVE			Z	3	1	28	PLOT #28			0019/0020	START SWEEP

NOTE: THE S+A DEVICES WERE IN THE ARMED POSITION DURING THE VIBRATION AND THE SWITCH POSITION WAS MONITORED. AFTER EACH AXIS OF VIBRATION THE S+A DEVICE WAS CYCLED FROM SAFE TO ARMED TO SAFE, AND THE ELAPSED TIME FOR 90° ROTATION PLUS ACTUATION CURRENT WAS MONITORED WITH CUSTOMER SUPPLIED TEST EQUIPMENT.

CUSTOMER TELEDYNE McCORMICK-SELPH

M&O NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0005

DATE 3-9-78

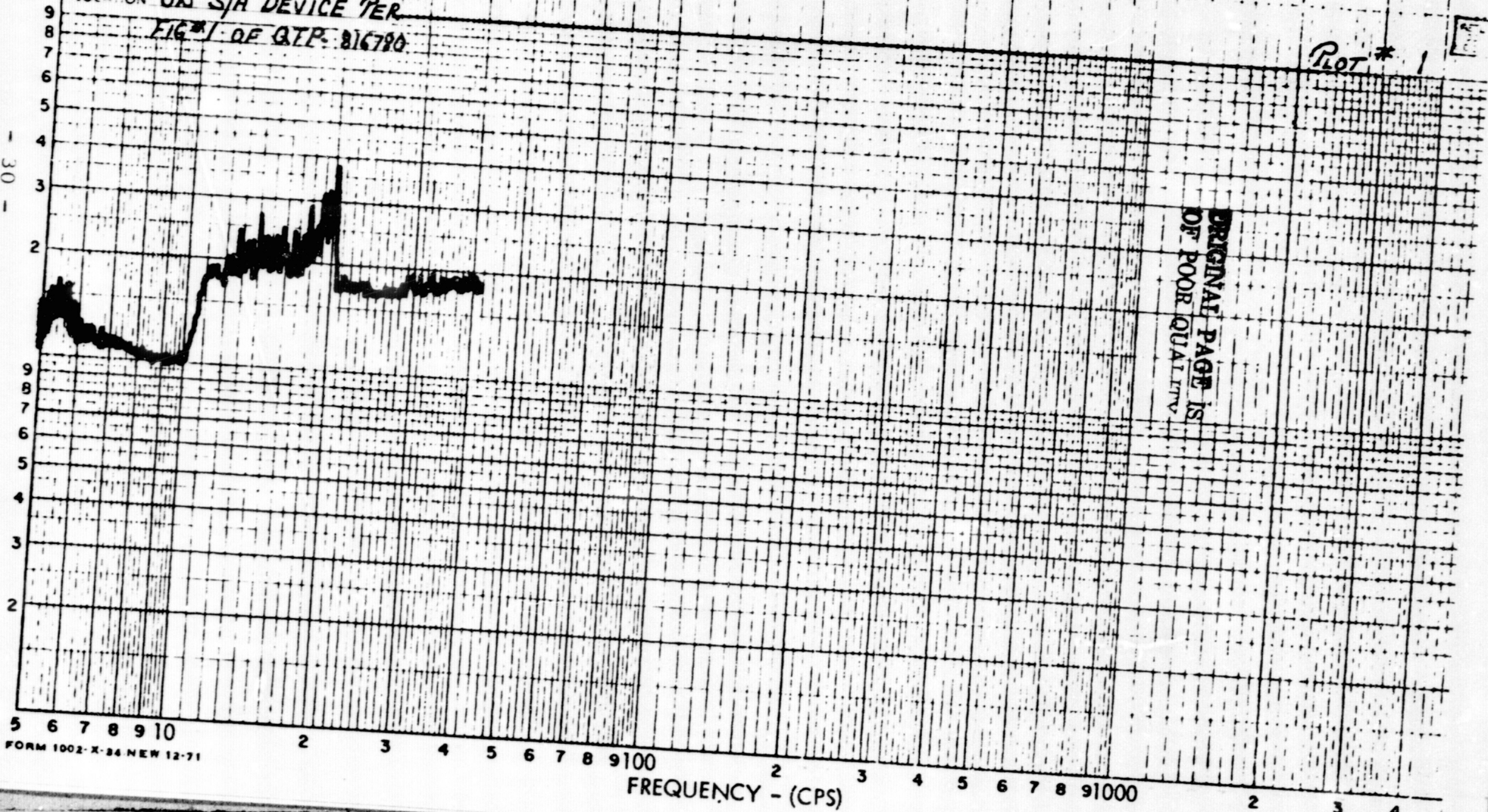
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 1



FORM 1002-X-84 NEW 12-71

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CUSTOMER TELEDYNE McCORMICK-SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO 0006

DATE 3-9-78

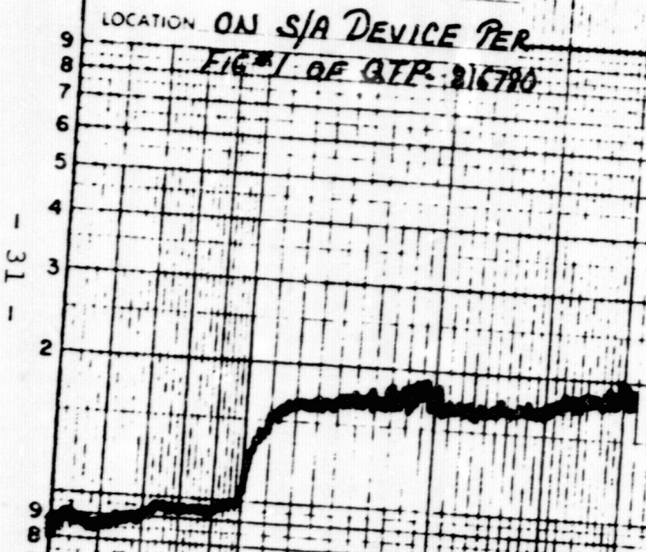
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 2



1 3 1 1

9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE Mc CORMICK-SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0008

DATE 3-9-78

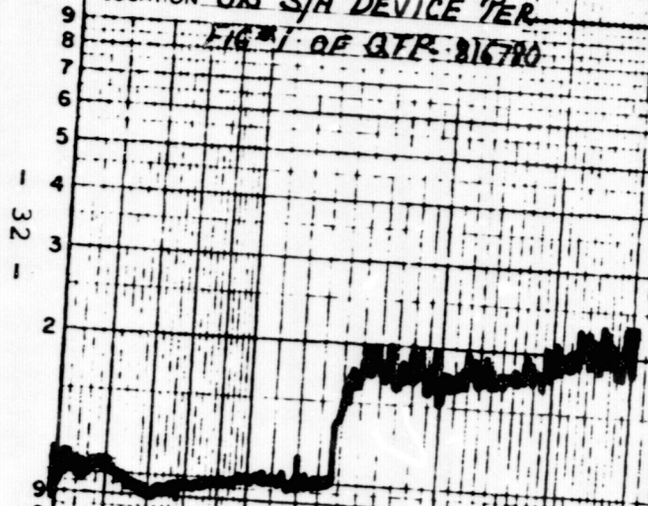
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ACCELEROMETER NO. 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 3



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- 32 -

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0009

DATE 3-9-78

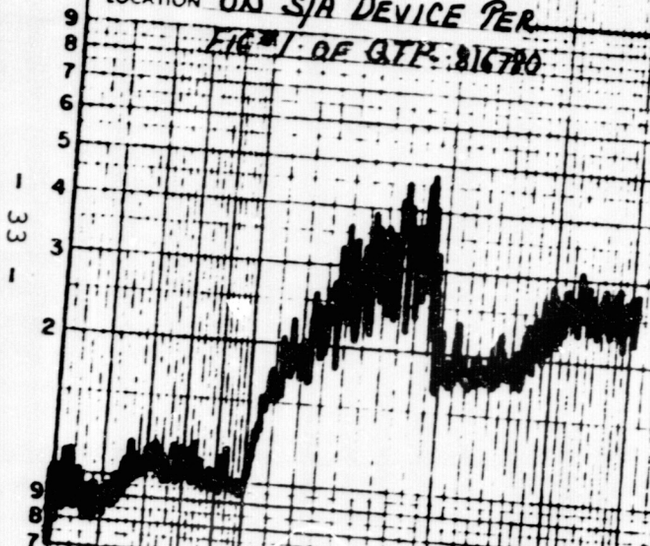
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 4



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1 33 1

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84-NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0010

DATE 3-9-78

INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP-816780

PLOT #5



9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4 5

FREQUENCY - (CPS)

FORM 1002-X-84-NEW 12-71

CUSTOMER TELEDYNE McCORMICK-SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0011

DATE 3-9-78

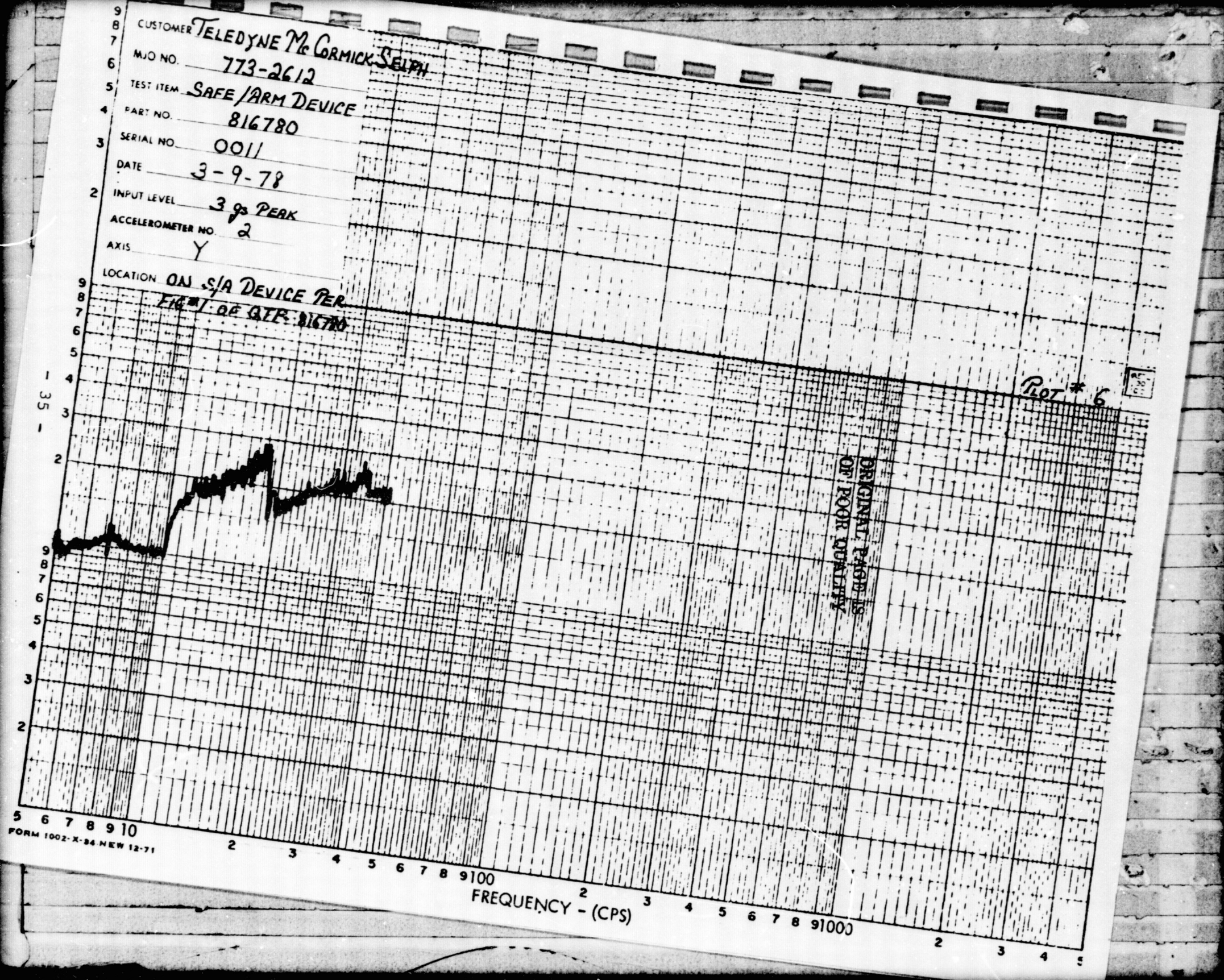
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO. 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP: 816780

PLOT # 6



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FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK-SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0012

DATE 3-9-78

INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG 1 OF QTP 816780

PLOT # 7

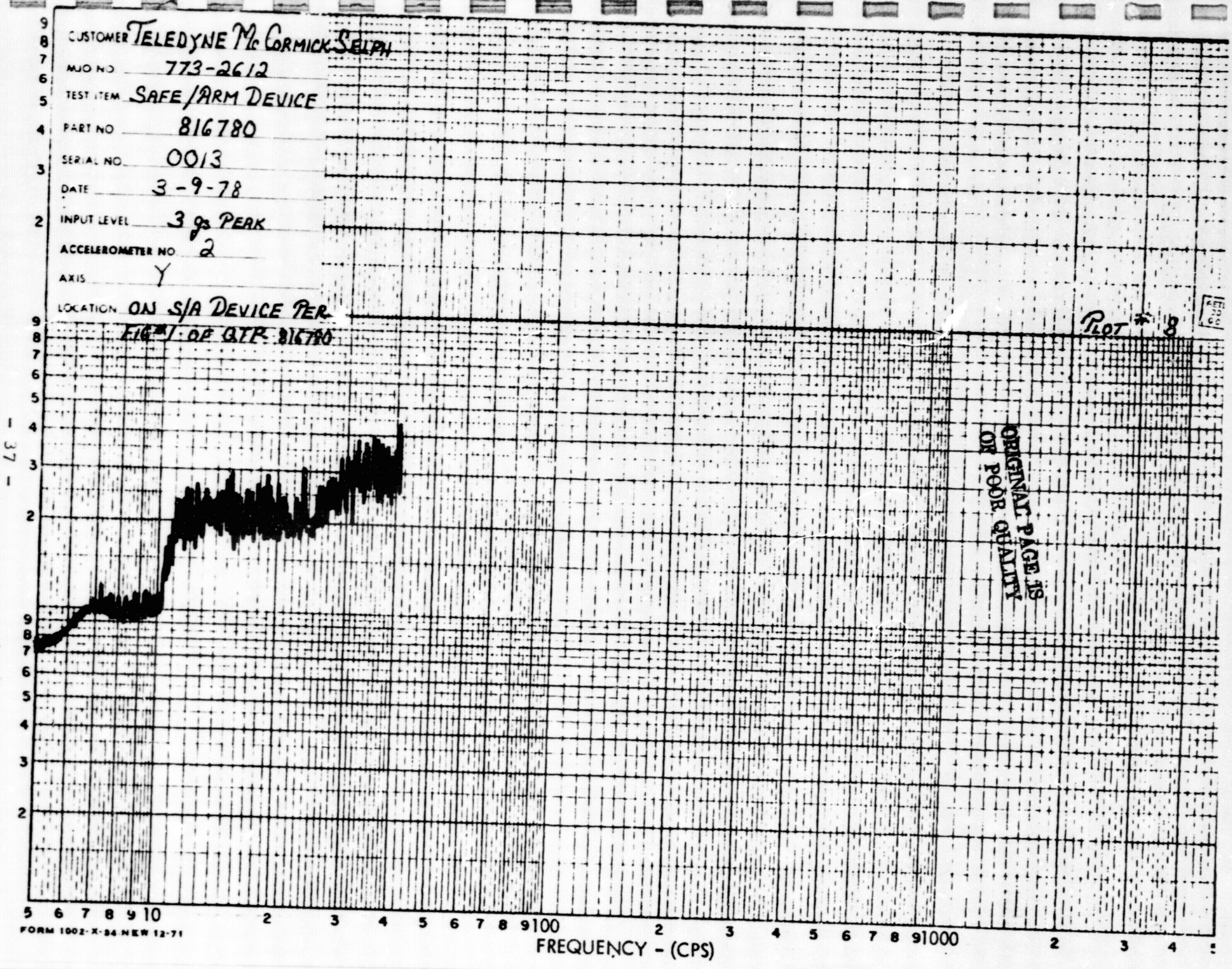
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9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4 5

FREQUENCY - (CPS)

FORM 1002-X-84 MER 12-71


CUSTOMER TELEDYNE Mc CORMICK-SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0013
DATE 3-9-78
INPUT LEVEL 3 gs PEAK
ACCELEROMETER NO 2
AXIS Y
LOCATION ON S/A DEVICE PER FIG 1 OF QTP 816780
PLOT # 8
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FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK-SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0014

DATE 3-9-78

INPUT LEVEL 3 g PEAK

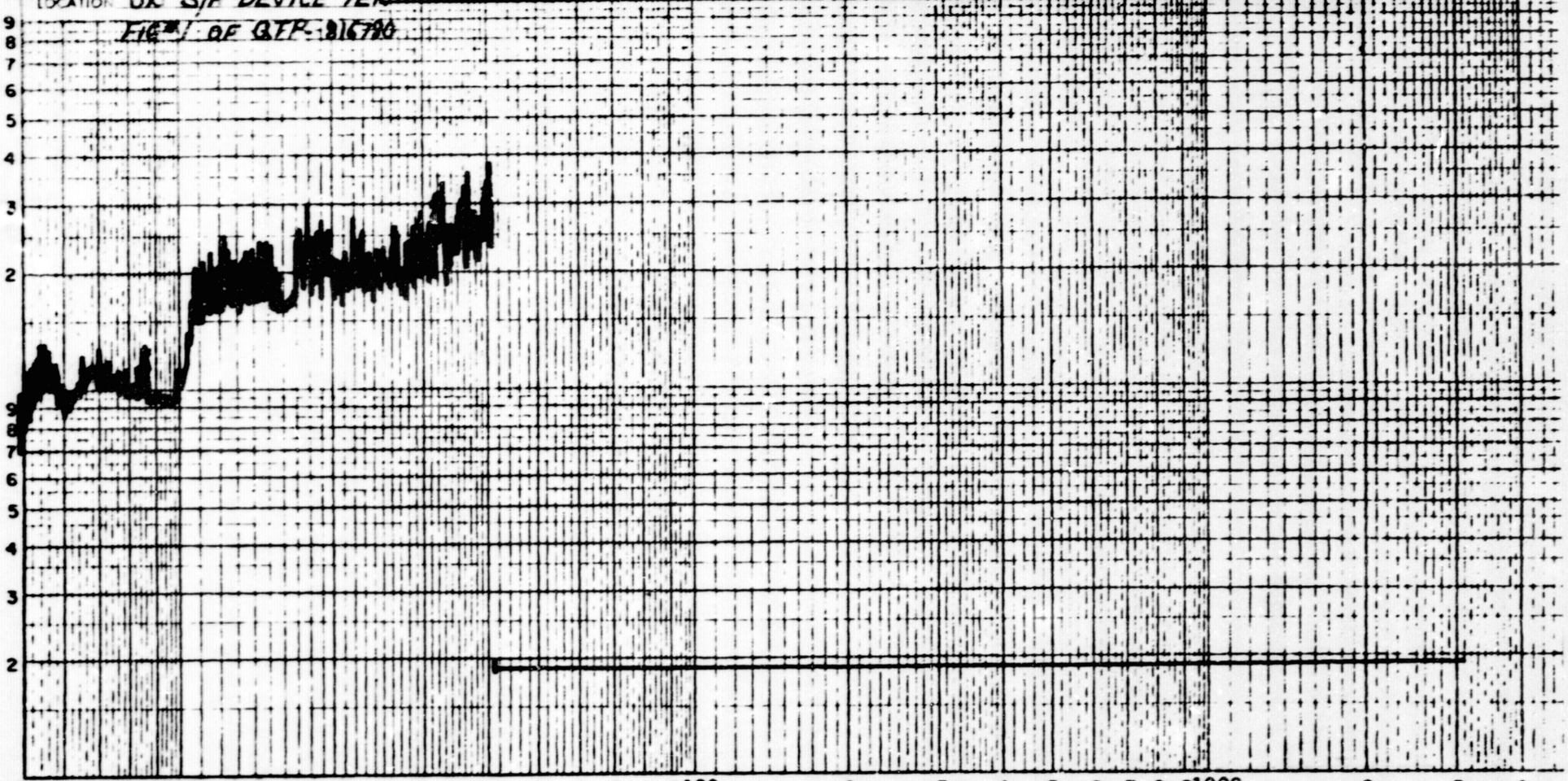
ACCELEROMETER NO 6

AXIS Y

LOCATION ON S/A DEVICE PER FIG 1 OF QEP-816780

PLOT # 9

KEUFFEL & ESSER CO.



FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK-SELPH

M.O NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0016

DATE 3-9-78

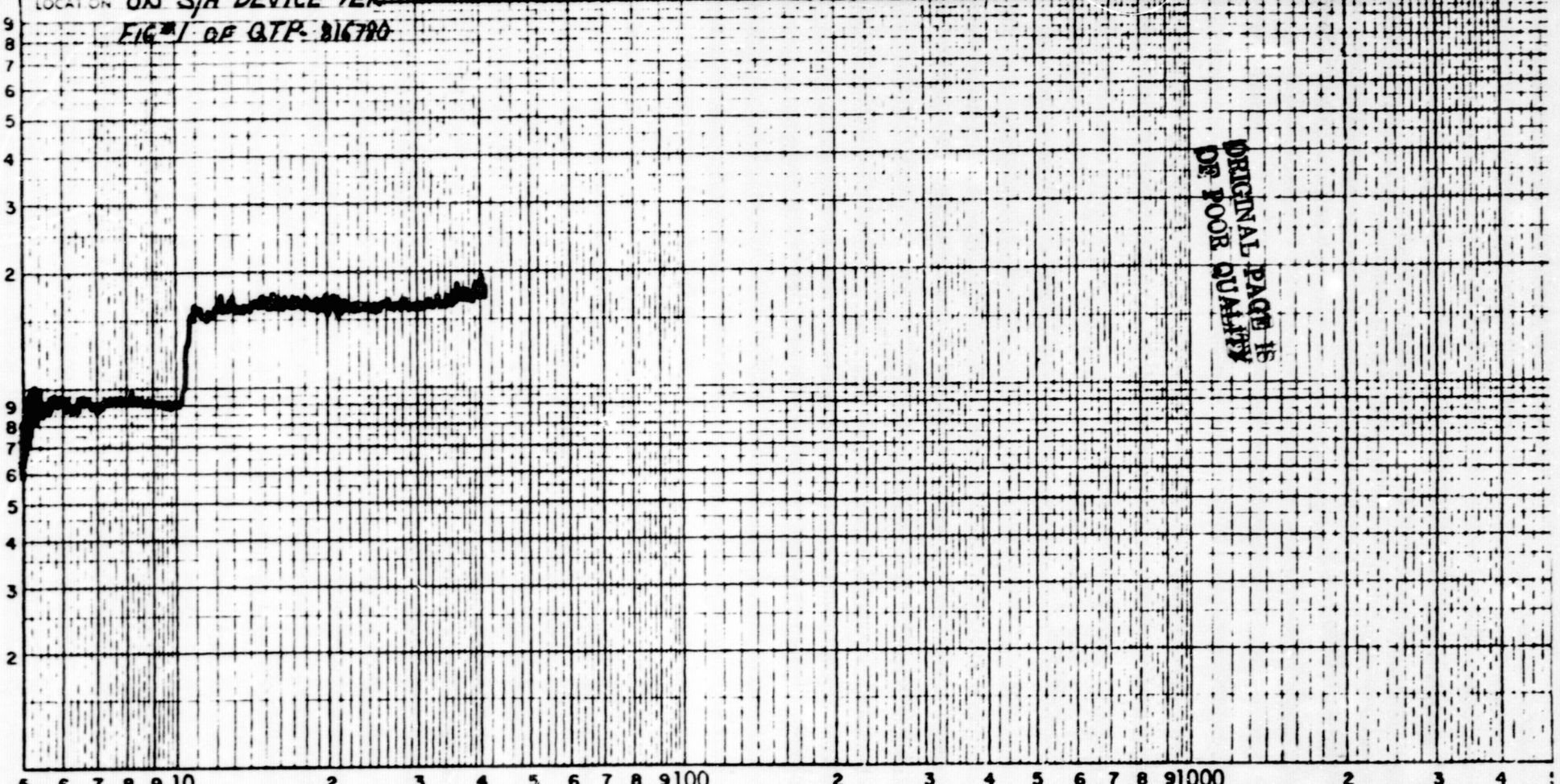
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ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP-816780

PLOT # 10



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FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

M.O NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0017

DATE 3-9-78

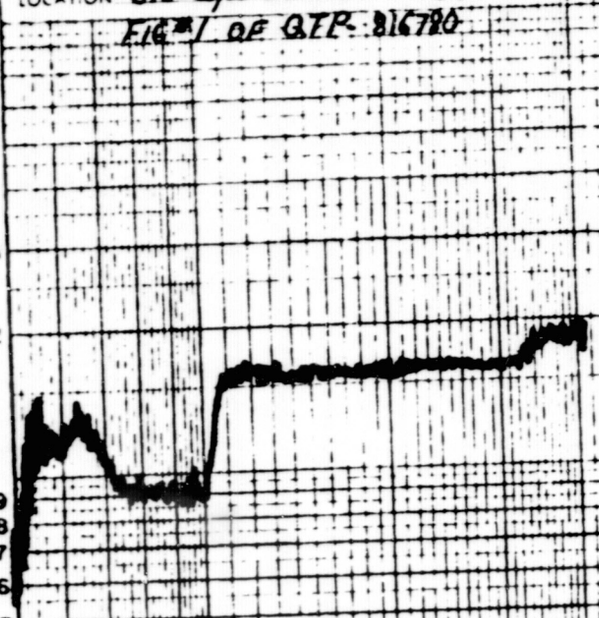
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 11



9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

ORIGINAL PAGE IS OF POOR QUALITY

CUSTOMER TELEDYNE McCORMICK SELPH

M.O. NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0018

DATE 3-9-78

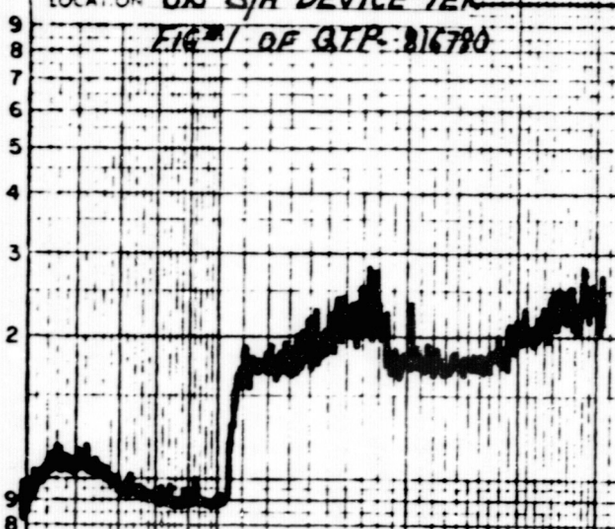
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 12



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9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE Mc CORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0019

DATE 3-9-78

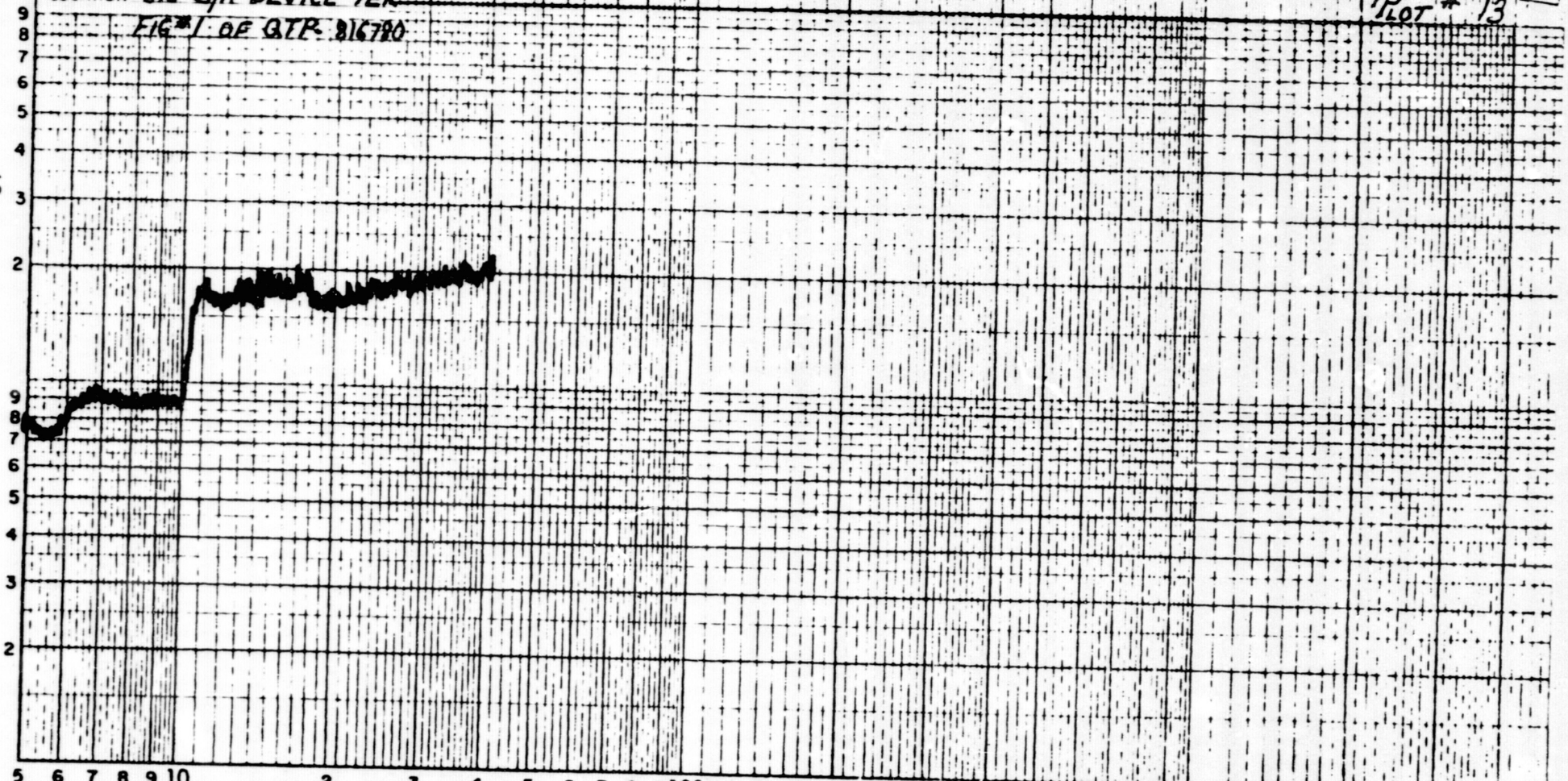
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO. 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 13



5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0020

DATE 3-9-78

INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Y

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 14

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FREQUENCY - (CPS)

FORM 1002-X-24 NEW 12-71

CUSTOMER TELEDYNE McCORMICK-SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0005 + 0006

DATE 3-9-78

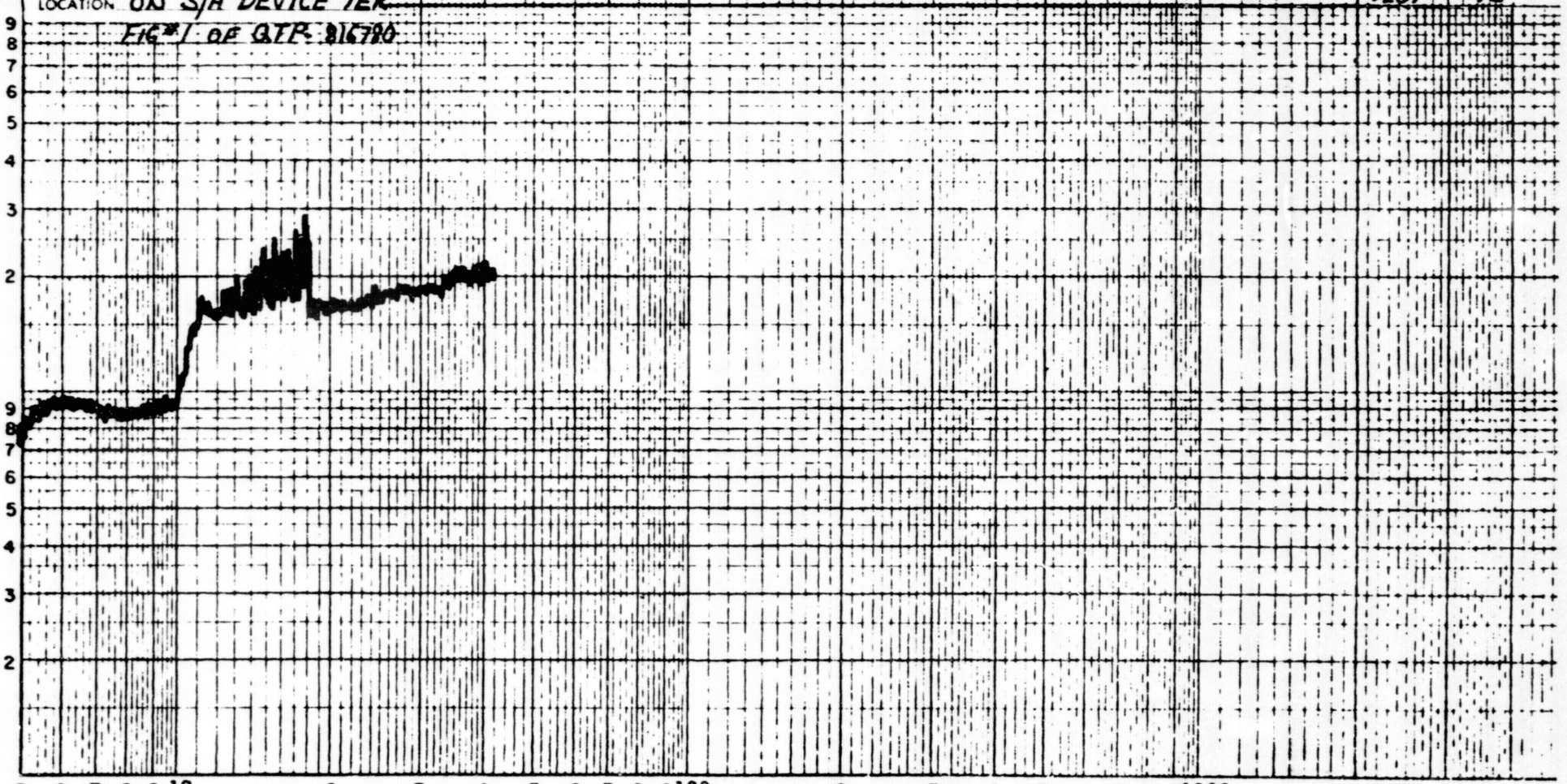
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO. 2

AXIS X

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 15



FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE Mc CORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0008 + 0009

DATE 3-9-78

INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS X

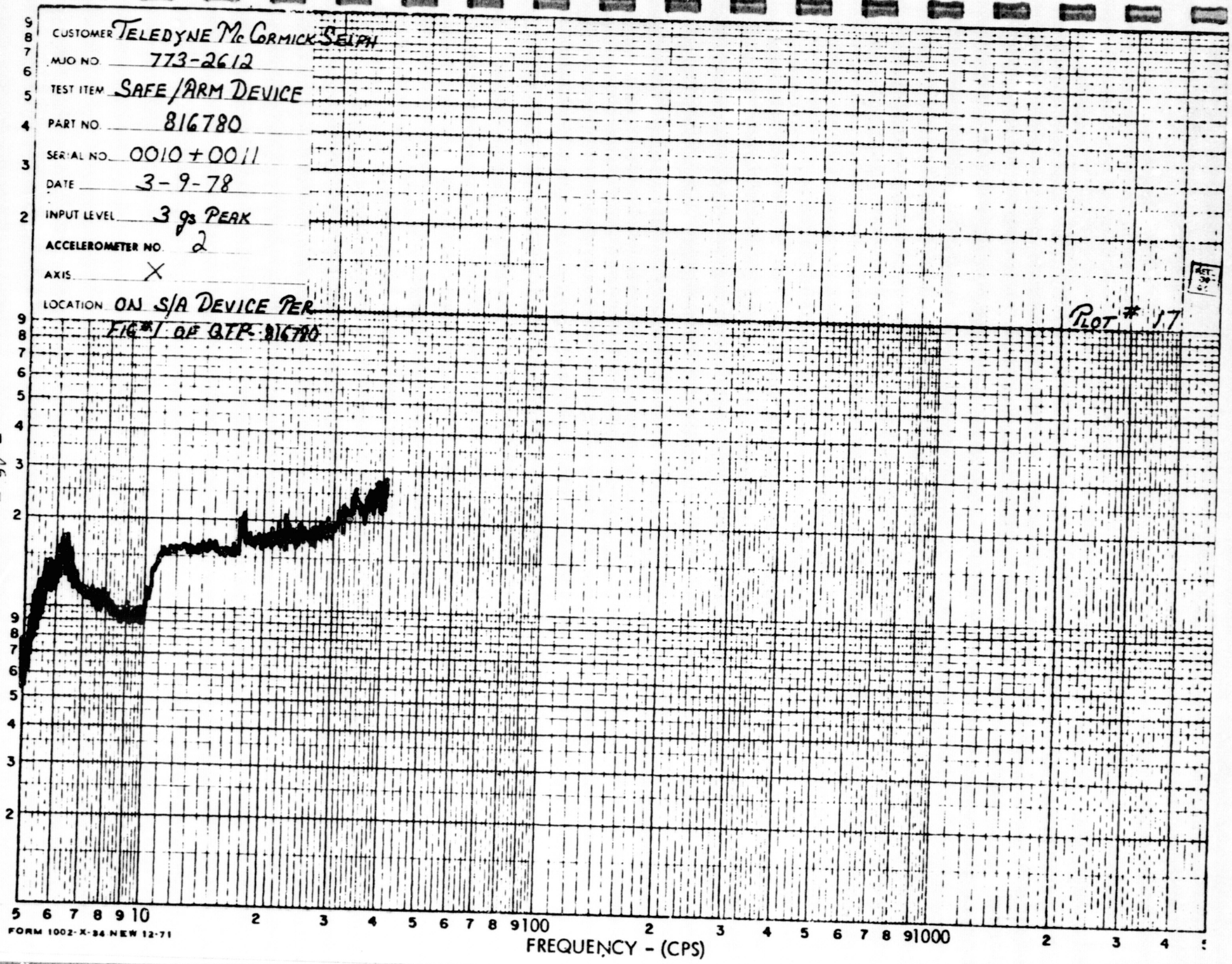
LOCATION ON S/A DEVICE PER FIG #1 OF QTY: 816780

PLOT # 16

ORIGINAL PAGE IS OF POOR QUALITY

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE Mc CORMICK SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO. 816780
SERIAL NO. 0010 + 0011
DATE 3-9-78
INPUT LEVEL 3 gs PEAK
ACCELEROMETER NO. 2
AXIS X
LOCATION ON S/A DEVICE PER FIG #1 OF QTP-816780
PLOT # 17
FREQUENCY - (CPS)
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK-SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0012 + 0013

DATE 3-9-78

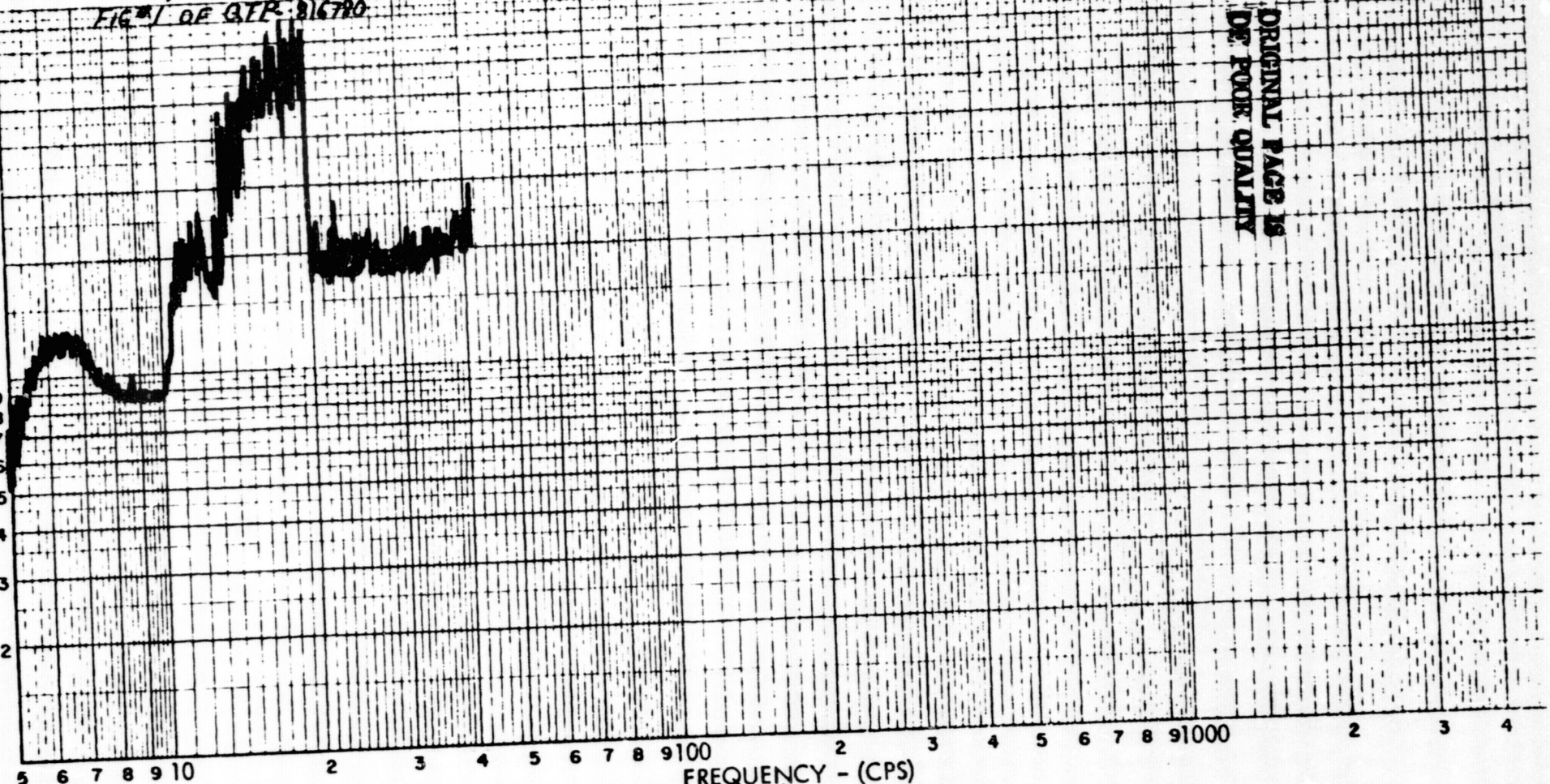
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS X

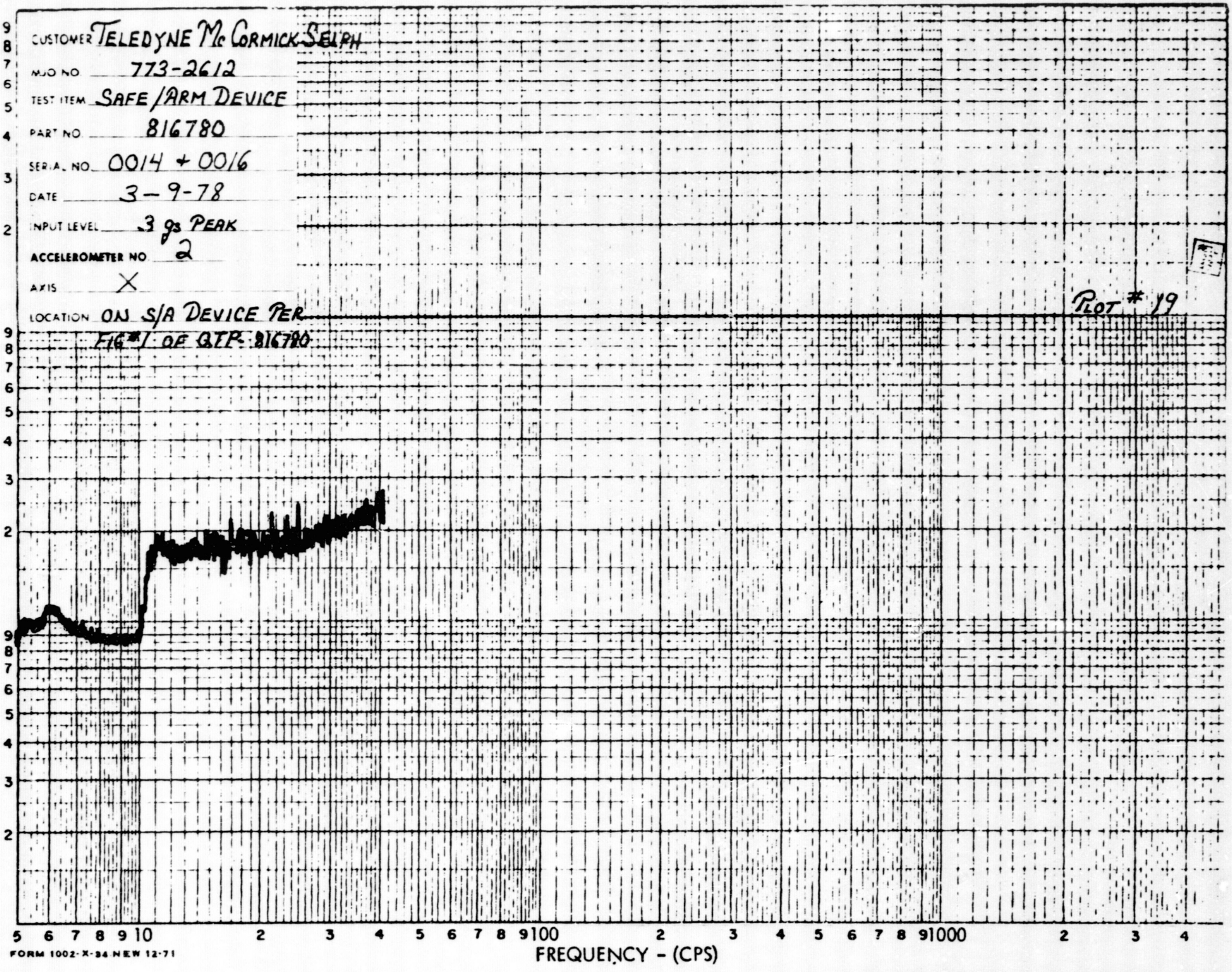
LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 18



ORIGINAL PAGE IS OF POOR QUALITY

FORM 1002-X-34 NEW 12-71



FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0017 + 0018

DATE 3-9-78

INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS X

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 20

ORIGINAL PAGE IS OF POOR QUALITY

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE Mc CORMICK-SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0019 + 0020

DATE 3-9-78

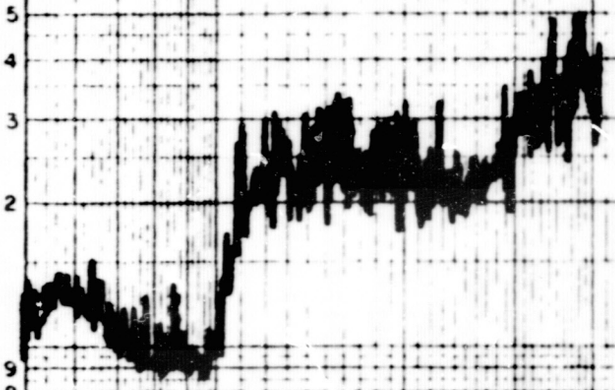
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS X

LOCATION ON S/A DEVICE PER FIG #1 OF QTR 816780

PLOT # 21



9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002 X-84 NEW 12-71

CUSTOMER TELEDYNE Mc CORMICK SELPH

M/O NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0005 + 0006

DATE 3-9-78

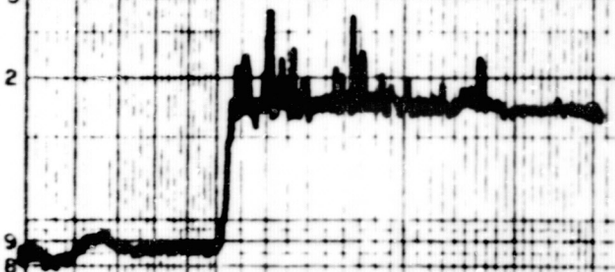
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Z

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 22



ORIGINAL PAGE IS
OF POOR QUALITY

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK-SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0008 + 0009

DATE 3-9-78

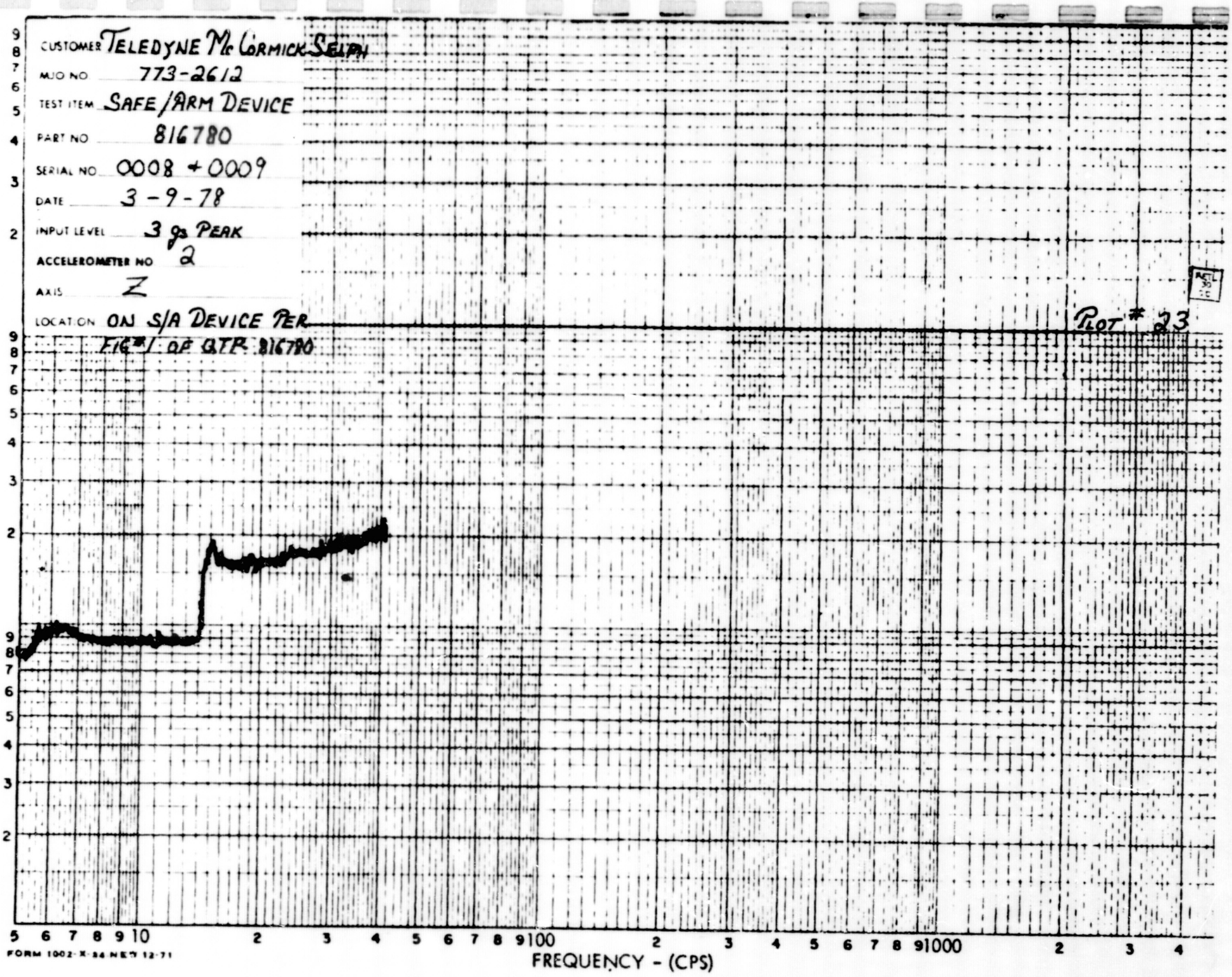
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Z

LOCATION ON S/A DEVICE PER FIG #1 OF QTR 816780

PLOT # 23



FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE Mc CORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0010 + 0011

DATE 3-9-78

INPUT LEVEL 3 gs PEAK

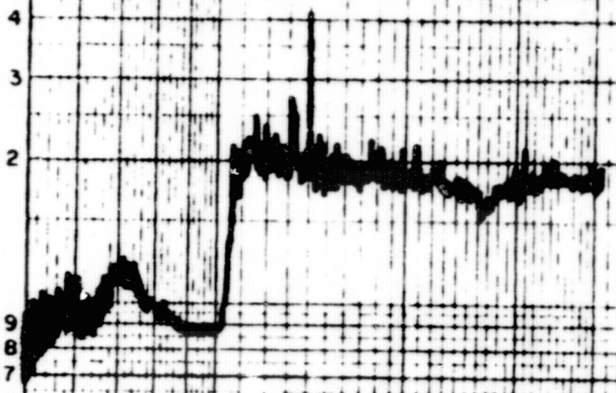
ACCELEROMETER NO 2

AXIS Z

LOCATION ON S/A DEVICE PER FIG #1 OF QTR 816780

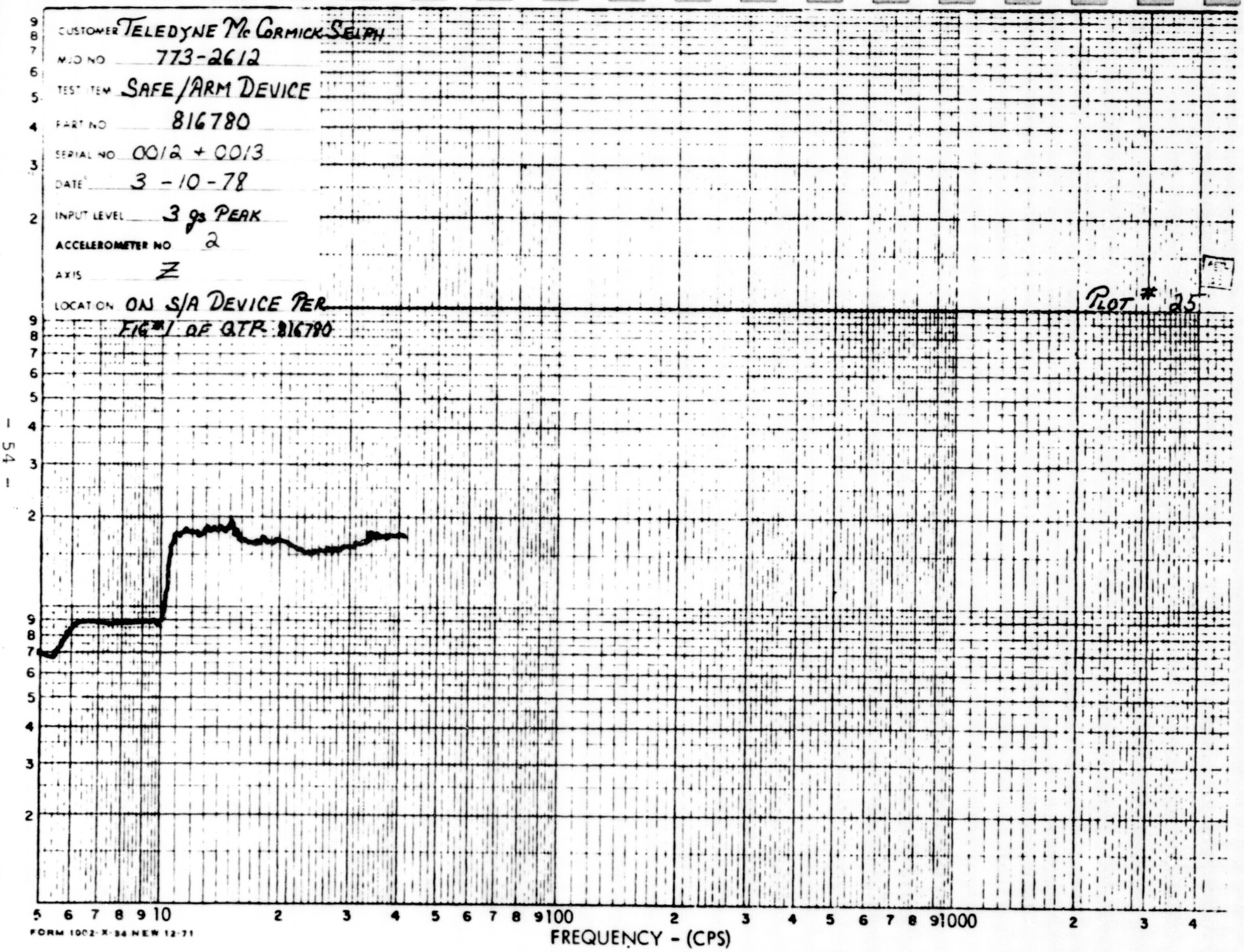
PLOT # 24

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FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE Mc CORMICK SELPH
M.O NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0012 + 0013
DATE 3-10-78
INPUT LEVEL 3 gs PEAK
ACCELEROMETER NO 2
AXIS Z
LOCATION ON S/A DEVICE PER FIG #1 OF QTR 816780
PLOT # 25
FREQUENCY - (CPS)
FORM 1002-X-36 NEW 12-71

CUSTOMER TELEDYNE Mc CORMICK-SELPH

MOD NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0014 + 0016

DATE 3-10-78

INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Z

LOCATION ON S/A DEVICE PER FIG #1 OF QTP-816780

PLOT # 26

ORIGINAL PAGE IS OF POOR QUALITY



9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0017 + 0018

DATE 3 - 10 - 78

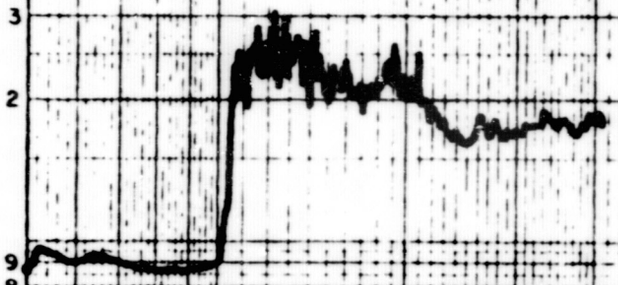
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Z

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 27



9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2 9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO. 0019 + 0020

DATE 3-10-78

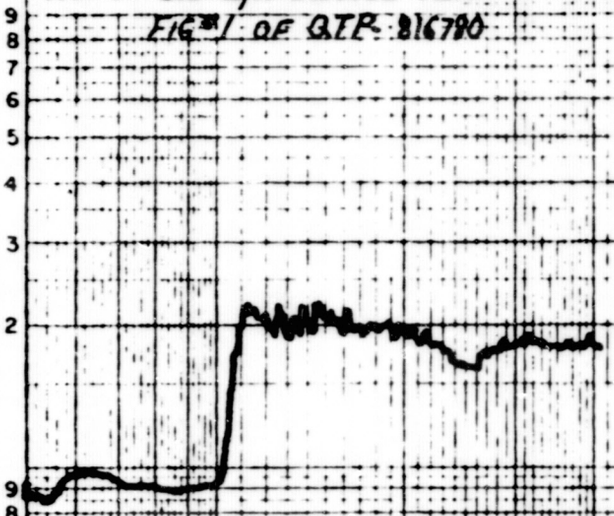
INPUT LEVEL 3 gs PEAK

ACCELEROMETER NO 2

AXIS Z

LOCATION ON S/A DEVICE PER FIG #1 OF QTP 816780

PLOT # 28



ORIGINAL PAGE IS OF POOR QUALITY

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.
NTS

AETL VIBRATION TEST DATA

Date Started: 3-9-78
Date Completed: 3-9-78
Customer: TELEDYNE McCORMICK SELPH
Test: Random
Specimen Description: SAFETY AND ARMING DEVICE
Specimen Part No. 816780
Specification: QTP 816780 PARA 5.4
M.J.O.: 773-2610
Performed By: G.W. CAYER
Test Engineer: G. MATTESON
Witnessed By: AETL

Day	Hour	°F	Hz	G^2/Hz	db/oct	db/oct	Grms	SEC	X-Y-Z	Noted	Noted		Noted	Units
					Frequency Bandwidth	P.S.D. Level	Roll-Up	Roll-Off	Acceleration Level	Duration	Axis	Test Sequence	Plot No.	Specimen Serial No.	Remarks
3-9-78	0900	AMB	20-40	—	3	—	22.2	N/A	Y	1	1		FIXTURE	EQUALIZATION (LIFT OFF)
			40-54	.15	—	—								
			54-100	—	9	—								
			100-170	1.0	—	—								
			170-2000	—	—	3								
	0934		SAME AS ABOVE				21.5	60	Y	2	2		0005	RANDOM RUN MISSION #1
	0946		SAME AS ABOVE				22	60	Y	3	3		0006	RANDOM RUN
	1000		SAME AS ABOVE				22	60	Y	4	4		0008	RANDOM RUN
	1020		SAME AS ABOVE				22	60	Y	5	5		0009	RANDOM RUN
	1031		SAME AS ABOVE				22	60	Y	6	6		0010	RANDOM RUN
	1041		SAME AS ABOVE				22	60	Y	7	7		0011	RANDOM RUN
	1051		SAME AS ABOVE				22	60	Y	8	8		0012	RANDOM RUN
	1101		SAME AS ABOVE				22	60	Y	9	9		0013	RANDOM RUN
	1112		SAME AS ABOVE				22	60	Y	10	10		0014	RANDOM RUN
	1124		SAME AS ABOVE				22	60	Y	11	11		0016	RANDOM RUN MISSION #1
	1135		SAME AS ABOVE				22	60	Y	12	12		0017	RANDOM RUN MISSION #1
	1138		SAME AS ABOVE				22	50	Y	13	13		0017	RANDOM RUN MISSION #2
	1150		SAME AS ABOVE				22	60	Y	14	14		0018	RANDOM RUN MISSION #1
	1154		SAME AS ABOVE				22	50	Y	15	15		0018	RANDOM RUN MISSION #2
	1236		SAME AS ABOVE				22	60	Y	16	16		0019	RANDOM RUN MISSION #1
	1239		SAME AS ABOVE				22	50	Y	17	17		0019	RANDOM RUN MISSION #2
3-9-78	1242	AMB	SAME AS ABOVE				22	40	Y	18	18		0019	RANDOM RUN MISSION #3

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APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.

AETL VIBRATION TEST DATA

Date Started: 3-9-78
Date Completed: 3-10-78
Customer: TELEDYNE McCORMICK SELPH
Specimen Description: SAFETY AND ARMING DEVICES
Specification: QTP 816780 REV 'A', PARA 5.4
Test: Random
Specimen Part No.: 816780
M.J.O.: 773-2612
Performed By: G. W. CAYER
Test Engineer: G. MATTESON
Witnessed By:

Day	Hour	Temperature °F	Frequency Bandwidth Hz	P.S.D. Level G^2/Hz	Roll Up db/oct	Roll Off db/oct	Acceleration Level Grms	Duration SEC	Axis X-Y-Z	Test Sequence Noted	Plot No. Noted	Specimen Serial No. Remarks / Units
3-9-78	1255	AMB	SAME AS SEQ #1				22	60	Y	19	19	
	1257		SAME AS SEQ #1				22	50	Y	20	20	
	1300		SAME AS SEQ #1				22	40	Y	21	21	
	1340		20-40	—	3	—	13.2	N/A	X,Z	22	22	
			40-280	.08	—	—						
			280-400	—	6	—						
			400-800	.16	—	—						
			800-2000	—	—	6						
	1407		SAME AS ABOVE				13	60	X	23	23	
	1421		SAME AS ABOVE				13	60	X	24	24	
	1435		SAME AS ABOVE				13	60	X	25	25	
	1455		SAME AS ABOVE				13	60	X	26	26	
	1518		SAME AS ABOVE				13	60	X	27	27	
	1531		SAME AS ABOVE				13	60	X	28	28	
	1535		SAME AS ABOVE				13	60	X	29	29	
	1545		SAME AS ABOVE				13	60	X	30	30	
	1549		SAME AS ABOVE				13	50	X	31	31	
	1552		SAME AS ABOVE				13	40	X	32	32	
	1612		SAME AS ABOVE				13	60	Z	33	33	
	1623		SAME AS ABOVE				13	60	Z	34	34	
3-9-78	1637		SAME AS ABOVE				13	60	Z	35	35	
3-10-78	0849	AMB	SAME AS ABOVE				13	60	Z	36	36	

Noted	Remarks / Units
0020	RANDOM RUN MISSION #1
0020	RANDOM RUN MISSION #2
0020	RANDOM RUN MISSION #3
FIXTURE	EQUALIZATION (LIFT OFF)
0005/0006	RANDOM RUN MISSION #1
0008/0009	RANDOM RUN
0010/0011	RANDOM RUN
0012/0013	RANDOM RUN
0014/0016	RANDOM RUN
0017/0018	RANDOM RUN MISSION #1
0017/0018	RANDOM RUN MISSION #2
0019/0020	RANDOM RUN MISSION #1
0019/0020	RANDOM RUN MISSION #2
0019/0020	RANDOM RUN MISSION #3
0005/0006	RANDOM RUN MISSION #1
0008/0009	RANDOM RUN
0010/0011	RANDOM RUN
0012/0013	RANDOM RUN MISSION #1

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APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.
NTS

AETL VIBRATION TEST DATA

Date Started: 3-9-78
Date Completed: 3-10-78
Customer: TELEDYNE MC CORMICK SELPH
Test: Random
Specimen Description: SAFETY AND ARMING DEVICE
Specimen Part No.: 816780
Specification: QTP 816780 REV 'A', PARA 5.4
M.J.O.: 773-2612
Performed By: G. W. CAYER
Test Engineer: G. MATTESON
Witnessed By:

Day	Hour	°F	Hz	G^2/Hz	db/oct	db/oct	Grms	Sec.	X-Y-Z	Noted	Noted	Noted	Units
			Date	Frequency Bandwidth	P.S.D. Level	Roll-Up	Roll-Off	Acceleration Level	Duration	Axis	Test Sequence	Plot No.	Specimen Serial No.	Remarks
3-10-78	0902	AMB	SAME AS SEQ#		22		13	60	Z	37	37	0014/0016	RANDOM RUN MISSION #1
	0917		SAME AS SEQ#		22		13	60	Z	38	38	0017/0018	RANDOM RUN MISSION #1
	0920		SAME AS SEQ#		22		13	50	Z	39	39	0017/0018	RANDOM RUN MISSION #2
	0935		SAME AS SEQ#		22		13	60	Z	40	40	0019/0020	RANDOM RUN MISSION #1
	0937		SAME AS SEQ#		22		13	50	Z	41	41	0019/0020	RANDOM RUN MISSION #2
	0939		SAME AS SEQ#		22		13	40	Z	42	42	0019/0020	RANDOM RUN MISSION #3
	1050		20-40	—	3	—	22.9	N/A	Y	43	43	FIXTURE	EQUALIZATION (BOOST)
			40-54	.28	—	—							
			54-100	—	6	—							
			100-170	1.0	—	—							
			170-2000	—	—	3							
	1057		SAME AS ABOVE				22.5	120	Y	44	44	0005	RANDOM RUN MISSION #1
	1107		SAME AS ABOVE				22.5	120	Y	45	45	0006	RANDOM RUN
	1112		SAME AS ABOVE				22.5	120	Y	46	46	0008	RANDOM RUN
	1118		SAME AS ABOVE				22.6	120	Y	47	47	0009	RANDOM RUN
	1124		SAME AS ABOVE				22.6	120	Y	48	48	0010	RANDOM RUN
	1131		SAME AS ABOVE				22.6	120	Y	49	49	0011	RANDOM RUN
	1137		SAME AS ABOVE				22.6	120	Y	50	50	0012	RANDOM RUN
	1145		SAME AS ABOVE				22.6	120	Y	51	51	0013	RANDOM RUN
	1158		SAME AS ABOVE				22.6	120	Y	52	52	0014	RANDOM RUN
	1203		SAME AS ABOVE				22.6	120	Y	53	53	0016	RANDOM RUN
3-10-78	1210	AMB	SAME AS ABOVE				22.6	120	Y	54	54	0017	RANDOM RUN MISSION #1

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APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.
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AETL VIBRATION TEST DATA

Date Started: 3-9-78
Date Completed: 3-10-78
Customer: TELEDYNE McCORMICK SELPH
Test: Random
M.J.O.: 773-2612
Performed By: G.W. CAYER
Test Engineer: G. MATTESON
Witnessed By:
Specimen Description: SAFETY AND ARMING DEVICE
Specimen Part No. 816780
Specification: QTP 816780 REV A, PARA 5.4

Day	Hour	°F	Hz	G^2/Hz	db/oct	db/oct	Grms	SEC	X-Y-Z	Noted	Noted		Noted	Units
		Temperature	Frequency Bandwidth	P.S.D. Level	Roll-Up	Roll-Off	Acceleration Level	Duration	Axis	Test Sequence	Plot No.		Specimen Serial No.	Remarks
3-10-78	1214	AMB	SAME AS	SEQ # 43			22.6	200	Y	55	55		0017	RANDOM RUN MISSION #1
	1311		SAME AS	SEQ # 43			22.6	120	Y	56	56		0018	RANDOM RUN MISSION #2
	1313		SAME AS	SEQ # 43			22.6	200	Y	57	57		0018	RANDOM RUN MISSION #2
	1323		SAME AS	SEQ # 43			22.6	120	Y	58	58		0019	RANDOM RUN MISSION #1
	1325		SAME AS	SEQ # 43			22.6	200	Y	59	59		0019	RANDOM RUN MISSION #2
	1330		SAME AS	SEQ # 43			22.6	160	Y	60	60		0019	RANDOM RUN MISSION #3
	1342		SAME AS	SEQ # 43			22.6	120	Y	61	61		0020	RANDOM RUN MISSION #1
	1344		SAME AS	SEQ # 43			22.6	200	Y	62	62		0020	RANDOM RUN MISSION #2
	1348		SAME AS	SEQ # 43			22.6	160	Y	63	63		0020	RANDOM RUN MISSION #3
	1425		20-50	—	3	—	17.4	N/A	X+Z	64	64		FIXTURE	EQUALIZATION (BOOST)
			50-135	.08	—	—								
			135-250	—	3	—								
			250-440	.15	—	—								
			440-500	—	9	—								
			500-1100	.22	—	—								
			1100-2000	—	—	6								
	1441		SAME AS	ABOVE			17.4	120	Z	65	65		0005	RANDOM RUN MISSION #1
	1507		SAME AS	ABOVE			17.4	120	X	66	66		0005/0006	RANDOM RUN
	1520		SAME AS	ABOVE			17.4	120	X	67	67		0008/0009	RANDOM RUN
	1533		SAME AS	ABOVE			17.4	120	Z	68	68		0008/0009	RANDOM RUN
	1550		SAME AS	ABOVE			17.4	120	Z	69	69		0010/0011	RANDOM RUN
3-10-78	1603	AMB	SAME AS	ABOVE			17.4	120	X	70	70		0010/0011	RANDOM RUN MISSION #1

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APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.
NTS

AETL VIBRATION TEST DATA

Date Started: 9-10-78
Date Completed: 9-13-78
Customer: TELEDYNE McCORMICK SELPH
Test: Random
M.J.C.: 773-2612
Performed By: G.W. CAYER
Test Engineer: G. MATTESON
Witnessed By:
Specimen Description: SAFETY AND ARMING DEVICE
Specimen Part No.: 816780
Specification: QTP. 816780 REV A, PARA. 5.4

Day	Hour	°F	Hz	G^2/Hz	db/oct	db/oct	Grms	SEC	X-Y-Z	Noted	Noted		Noted	Units
3-10-78	1616	AMB	SAME AS	SEQ #	64	17.4	120	X	71	71		0012/0013	RANDOM RUN	MISSION #1
3-10-78	1625		SAME AS	SEQ #	64	17.4	120	Z	72	72		0012/0013	RANDOM RUN	
3-13-78	0830		SAME AS	SEQ #	64	17.4	120	Z	73	73		0014/0016	RANDOM RUN	
	0956		SAME AS	SEQ #	64	17.4	120	X	74	74		0014/0016	RANDOM RUN	
	1033		SAME AS	SEQ #	64	17.4	120	X	75	75		0017/0018	RANDOM RUN	MISSION #1
	1036		SAME AS	SEQ #	64	17.4	200	X	76	76		0017/0018	RANDOM RUN	MISSION #2
	1052		SAME AS	SEQ #	64	17.4	120	Z	77	77		0017/0018	RANDOM RUN	MISSION #1
	1055		SAME AS	SEQ #	64	17.4	200	Z	78	78		0017/0018	RANDOM RUN	MISSION #2
	1111		SAME AS	SEQ #	64	17.4	120	Z	79	79		0019/0020	RANDOM RUN	MISSION #1
	1113		SAME AS	SEQ #	64	17.4	200	Z	80	80		0019/0020	RANDOM RUN	MISSION #2
	1117		SAME AS	SEQ #	64	17.4	160	Z	81	81		0019/0020	RANDOM RUN	MISSION #3
	1128		SAME AS	SEQ #	64	17.4	120	X	82	82		0019/0020	RANDOM RUN	MISSION #1
	1130		SAME AS	SEQ #	64	17.4	200	X	83	83		0019/0020	RANDOM RUN	MISSION #2
3-13-78	1135		SAME AS	SEQ #	64	17.4	160	X	84	84		0019/0020	RANDOM RUN	MISSION #3
3-13-78	1311		20-40	—	3	—	11.9	N/A	Y	85	85		FIXTURE	EQUALIZATION
			40-60	1.0	—	—								(RE-ENTRY)
			60-75	—	—	12								
			75-230	.36	—	—								
			230-500	—	—	12								
			500-1000	.017	—	—								
			1000-2000	—	—	6								
3-13-78	1316	AMB	SAME AS	SEQ #	85	11.9	90	Y	86	86		0005	RANDOM RUN	MISSION #1

APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.

NTS

AETL VIBRATION TEST DATA

Date Started: 9-13-78
Date Completed: 9-13-78
Customer: TELEDYNE McCORMICK SELPH
Test: Random
M.J.O.: 773-2612
Performed By: G. W. CAYER
Specimen Description: SAFETY AND ARMING DEVICE
Specimen Part No. 816780
Test Engineer: G. MATTESON
Specification: QTP 816780 REV. 'A', PARA. 5.4
Witnessed By:

Day	Hour	°F	Hz	G^2/Hz	db/oct	db/oct	Grms	SEC	X-Y-Z	Noted	Noted	Noted	Remarks
			Date	Time	Temperature	Frequency Bandwidth	P.S.D. Level	Roll-Up	Roll-Off	Acceleration Level	Duration	Axis	Test Sequence	Plot No.	Specimen Serial No.	Units
3-13-78	1325	AMB	SAME AS	SEQ # 85			11.9	90	Y	87	87	0006	RANDOM RUN	MISSION #1
	1334		SAME AS	SEQ # 85			11.9	90	Y	88	88	0008	RANDOM RUN	
	1346		SAME AS	SEQ # 85			11.9	90	Y	89	89	0009	RANDOM RUN	
	1353		SAME AS	SEQ # 85			11.9	90	Y	90	90	0010	RANDOM RUN	
	1409		SAME AS	SEQ # 85			11.9	90	Y	91	91	0011	RANDOM RUN	
	1417		SAME AS	SEQ # 85			11.9	90	Y	92	92	0012	RANDOM RUN	
	1427		SAME AS	SEQ # 85			11.9	90	Y	93	93	0013	RANDOM RUN	
	1437		SAME AS	SEQ # 85			11.9	90	Y	94	94	0014	RANDOM RUN	
	1515		SAME AS	SEQ # 85			11.9	90	Y	95	95	0016	RANDOM RUN	MISSION #1
	1522		SAME AS	SEQ # 85			11.9	90	Y	96	96	0017	RANDOM RUN	MISSION #1
	1524		SAME AS	SEQ # 85			11.9	150	Y	97	97	0017	RANDOM RUN	MISSION #2
	1537		SAME AS	SEQ # 85			11.9	90	Y	98	98	0018	RANDOM RUN	MISSION #1
	1539		SAME AS	SEQ # 85			11.9	150	Y	99	90	0018	RANDOM RUN	MISSION #2
	1548		SAME AS	SEQ # 85			11.9	90	Y	100	100	0019	RANDOM RUN	MISSION #1
	1550		SAME AS	SEQ # 85			11.9	150	Y	101	101	0019	RANDOM RUN	MISSION #2
	1553		SAME AS	SEQ # 85			11.9	120	Y	102	102	0019	RANDOM RUN	MISSION #3
	1601		SAME AS	SEQ # 85			11.9	90	Y	103	103	0020	RANDOM RUN	MISSION #1
	1603		SAME AS	SEQ # 85			11.9	150	Y	104	104	0020	RANDOM RUN	MISSION #2
3-13-78	1606	AMB	SAME AS	SEQ # 85			11.9	120	Y	105	105	0020	RANDOM RUN	MISSION #3

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APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.
NTS

AETL VIBRATION TEST DATA

Date Started: 3-14-78
Date Completed: 3-15-78
Customer: TELEDYNE McCORMICK SELPH
Test: Random
Specimen Part No.: 816780
Specimen Description: SAFETY AND ARMING DEVICE
Specification: GTP 816780 REV A, PARA 5.4
M.J.O.: 773-2612
Performed By: G. W. CAYER
Test Engineer: G. MATTESON
Witnessed By:

Day	Hour	°F	Hz	G^2/Hz	db/oct	db/oct	Grms	SEC	X-Y-Z	Noted	Noted		Noted	Units
				Frequency Bandwidth	P.S.D. Level	Roll-Up	Roll-Off	Acceleration Level	Duration	Axis	Test Sequence	Plot No.	Specimen Serial No.	Remarks
3-14-78	0840	AMB	20-40	.75	—	—	12.2	N/A	X+Z	106	106		FIXTURE	EQUALIZATION (RE ENTRY)
			40-60	—	—	12								
			60-400	.13	—	—								
			400-2000	—	—	3								
	0914		SAME AS ABOVE				12.2	90	X	107	107		0005/0006	RANDOM RUN MISSION #1
	0927		SAME AS ABOVE				12.2	90	Z	108	108		0005/0006	RANDOM RUN
	0934		SAME AS ABOVE				12.2	90	Z	109	109		0008/0009	RANDOM RUN
	0945		SAME AS ABOVE				12.2	90	X	110	110		0008/0009	RANDOM RUN
	0955		SAME AS ABOVE				12.2	90	X	110	111		0010/0011	RANDOM RUN
	1036		SAME AS ABOVE				12.2	90	Z	112	112		0010/0011	RANDOM RUN
	1059		SAME AS ABOVE				12.2	90	Z	113	113		0012/0013	RANDOM RUN
	1107		SAME AS ABOVE				12.2	90	X	114	114		0012/0013	RANDOM RUN
	1120		SAME AS ABOVE				12.2	90	X	115	115		0014/0016	RANDOM RUN
	1132		SAME AS ABOVE				12.2	90	Z	116	116		0014/0016	RANDOM RUN
	1150		SAME AS ABOVE				12.2	90	Z	117	117		0017/0018	RANDOM RUN MISSION #1
	1152		SAME AS ABOVE				12.2	150	Z	118	118		0017/0018	RANDOM RUN MISSION #2
	1203		SAME AS ABOVE				12.2	90	X	119	119		0017/0018	RANDOM RUN MISSION #1
	1205		SAME AS ABOVE				12.2	150	X	120	120		0017/0018	RANDOM RUN MISSION #2
	1308		SAME AS ABOVE				12.2	90	X	121	121		0019/0020	RANDOM RUN MISSION #1
	1310		SAME AS ABOVE				12.2	150	X	122	122		0019/0020	RANDOM RUN MISSION #2
3-14-78	1315	AMB	SAME AS ABOVE				12.2	120	X	123	123		0019/0020	RANDOM RUN MISSION #3

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C-3

APPROVED ENGINEERING TEST LABORATORIES
A NATIONAL TECHNICAL SERVICES CO.

NTS

AETL VIBRATION TEST DATA

M.I.O.: 773-2612

Date Started: 3-14-78

Date Completed: 3-14-78

Customer: TELEDYNE McCORMICK SELPH

Test: Random

Specimen Part No.: 816780

Performed By: G.W. CAYER

Test Engineer: G. MATTESON

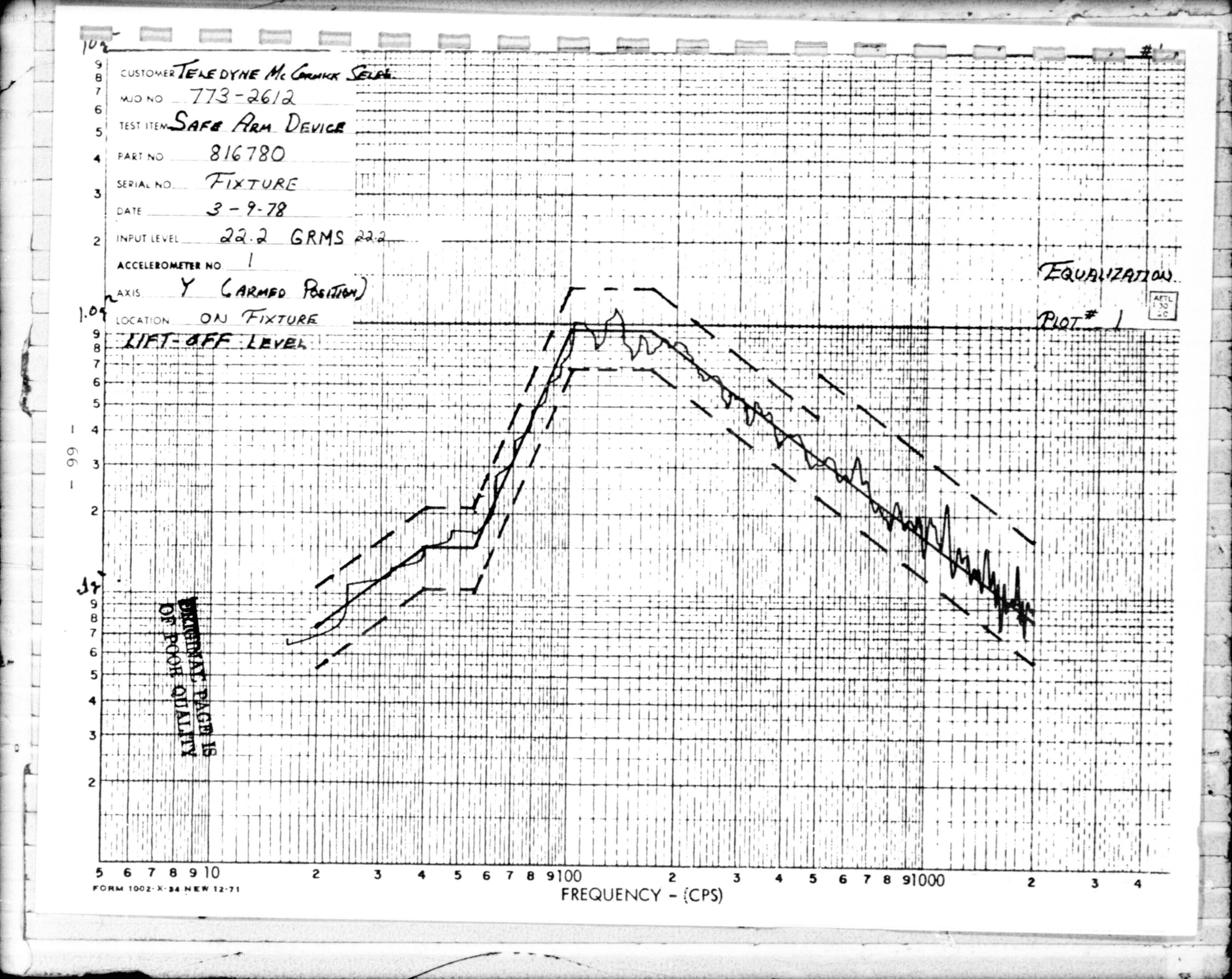
Witnessed By:

Specimen Description: SAFETY AND ARMING DEVICE

Specification: QTP 816780 REV. A, PARA. 5.4

Date	Time	Temperature	Frequency Bandwidth	P.S.D. Level	Roll-Up	Roll-Off	Acceleration Level	Duration	Axis	Test Sequence	Plot No.	Specimen Serial No.	Remarks
Day	Hour	°F	Hz	G^2/Hz	db/oct	db/oct	Grms	SEC	X-Y-Z	Noted	Noted	Noted	Units
3-14-78	1325	AMB	SAME AS SEQ#	106			12.2	90	Z	124	124	0019/0020	RANDOM RUN MISSION #1
	1329		SAME AS SEQ#	106			12.2	150	Z	125	125	0019/0020	RANDOM RUN MISSION #2
3-14-78	1333	AMB	SAME AS SEQ#	106			12.2	120	Z	126	126	0019/0020	RANDOM RUN MISSION #3

NOTE: THE S/A DEVICES WERE IN THE ARMED POSITION FOR THE FOR THE LIFT OFF AND BOOST RANDOM LEVELS AND IN THE SAFE POSITION FOR THE RE ENTRY RANDOM LEVELS. THE SWITCH POSITION WAS MONITORED DURING ALL VIBRATION, AND AFTER EACH MISSION OF VIBRATION THE S/A DEVICE WAS CYCLED FROM SAFE TO ARMED TO SAFE. THE ELAPSED TIME FOR 90° ROTATION AND ACTUATION CURRENT WAS MONITORED DURING CYCLING WITH CUSTOMER SUPPLIED TEST EQUIPMENT.


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE ARM DEVICE
PART NO 816780
SERIAL NO FIXTURE
DATE 3-9-78
INPUT LEVEL 22.2 GRMS 22.2
ACCELEROMETER NO 1
AXIS Y (ARMED POSITION)
LOCATION ON FIXTURE
LIFT-OFF LEVEL
EQUALIZATION
PLOT # 1
AFTL 130 2C
DOCUMENT PAGE IS OF POOR QUALITY
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE Mc CORMICK SELPH

M.O. NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0005

DATE 3-9-78

INPUT LEVEL 21.7 GRMS 22.2

ACCELEROMETER NO 1

AXIS Y (ARMED POSITION)

LOCATION ON [redacted] FIXTURE

LIFT-OFF LEVEL

PLOT # 2A

ASTEX SD QC

1.0 g²/Hz

FREQUENCY - (CPS)

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FORM 1002-X-34 NEW 12-71

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CUSTOMER TELEDYNE McCORMICK SELPH

W.O. NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SER. NO 0005

DATE 3-9-78

INPUT LEVEL 21.9 GRMS 22.2

ACCELEROMETER NO 2

AXIS Y (ARMED POSITION)

LOCATION ON S/A DEVICE

LIFT-OFF LEVEL

PLOT # 2B

1.0g

- 89 -

FREQUENCY - (CPS)

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FORM 1002-X-34 NEW 12-71

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CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0006

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

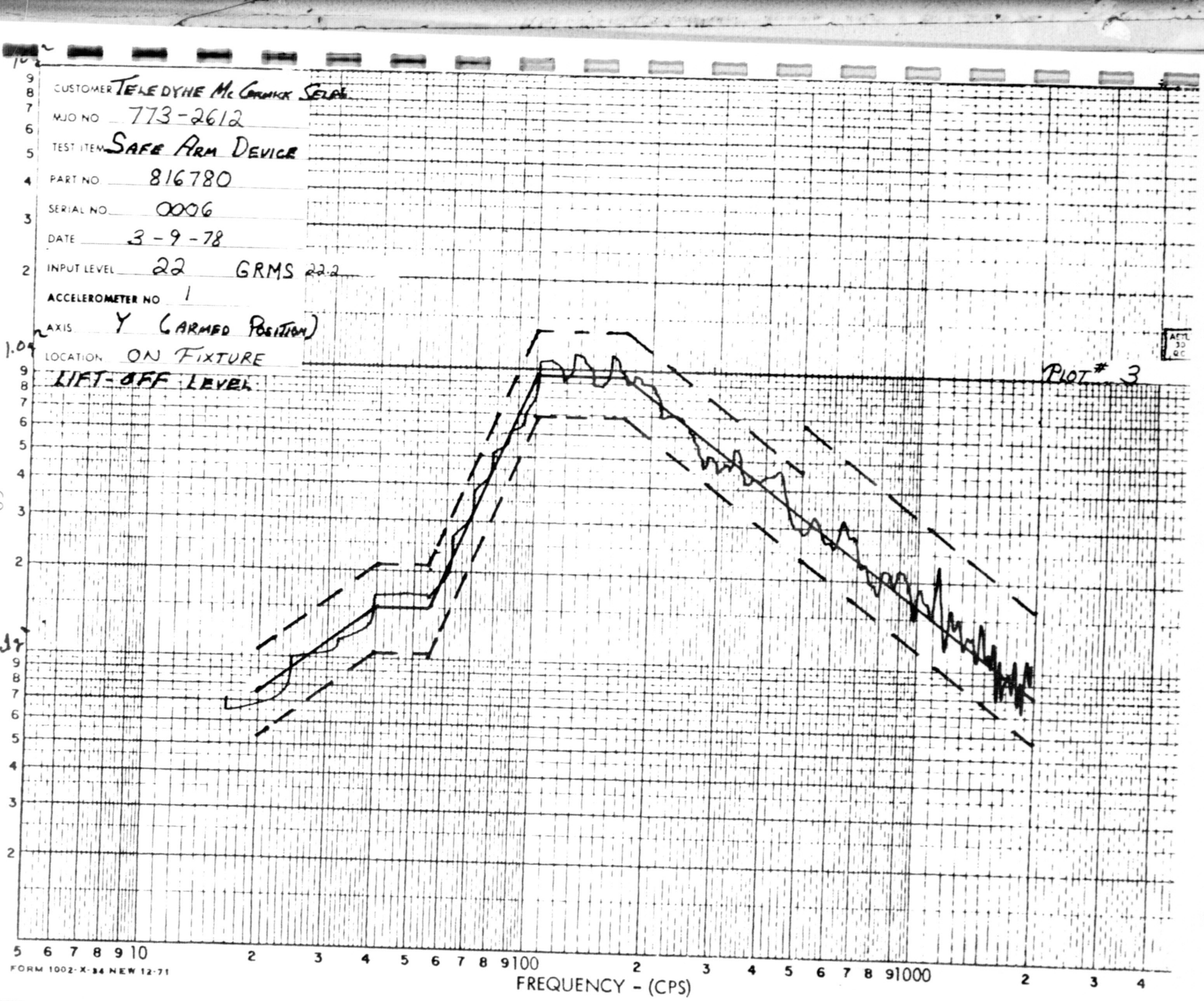
ACCELEROMETER NO 1

AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

LIFT-OFF LEVEL

PLOT # 3



FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0008

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

ACCELEROMETER NO 1

AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

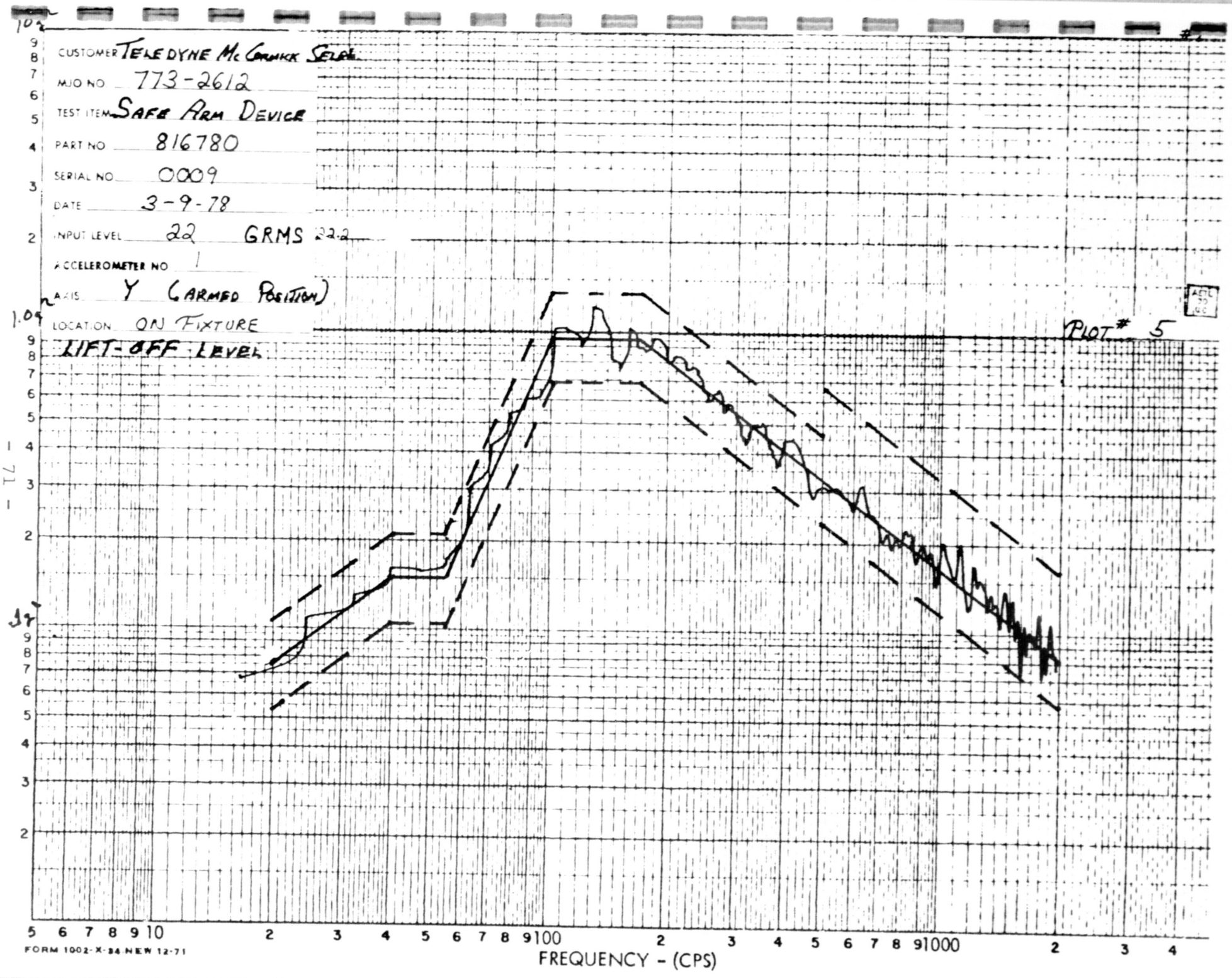
LIFT-OFF LEVEL

PLOT # 4

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FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE ARM DEVICE
PART NO 816780
SERIAL NO 0009
DATE 3-9-78
INPUT LEVEL 22 GRMS 22.2
ACCELEROMETER NO 1
AXIS Y (ARMED POSITION)
LOCATION ON FIXTURE
LIFT-OFF LEVEL
PLOT # 5
AETC 50 46
10²
1.0
1.0
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0010

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

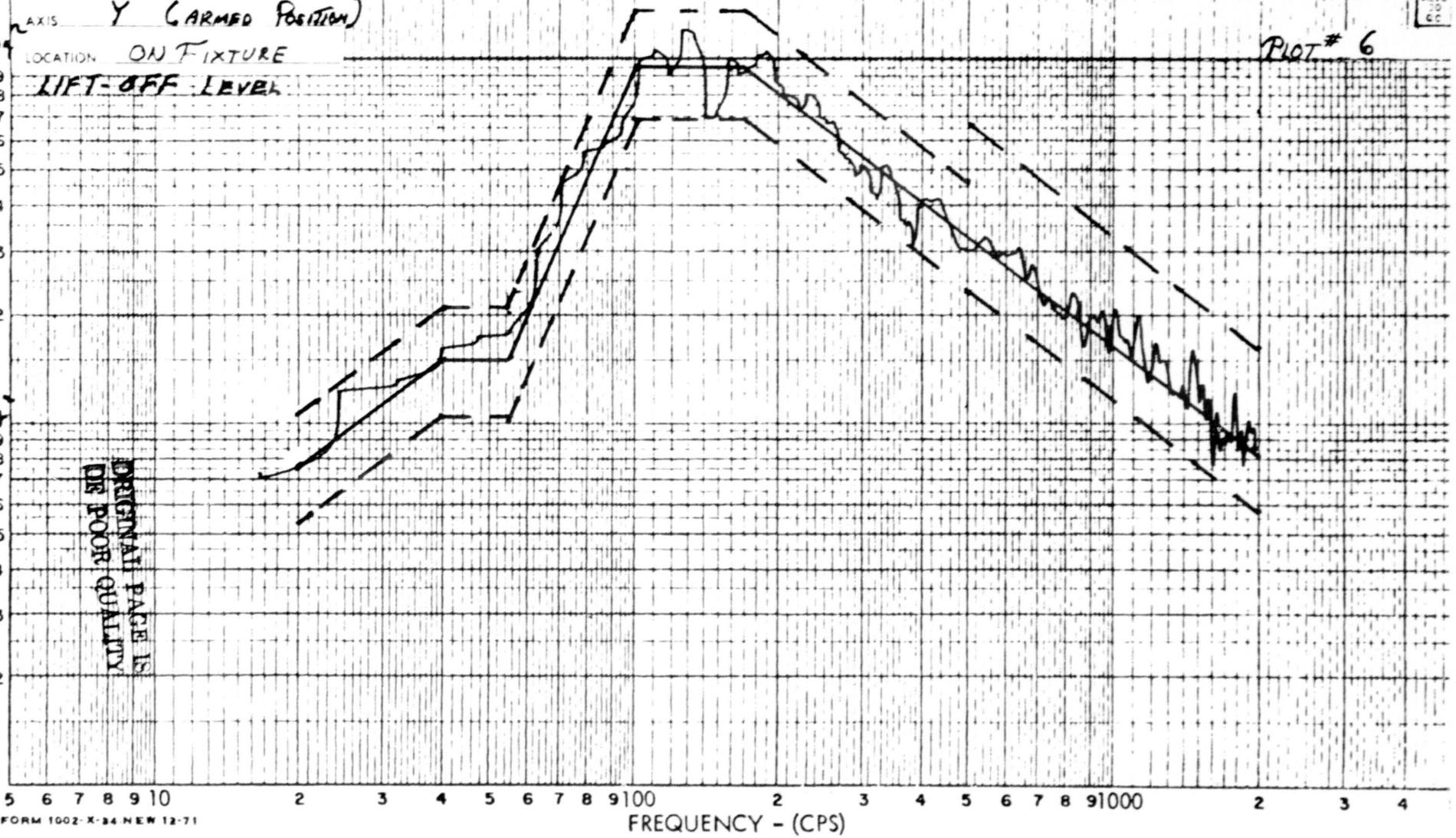
ACCELEROMETER NO 1

AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

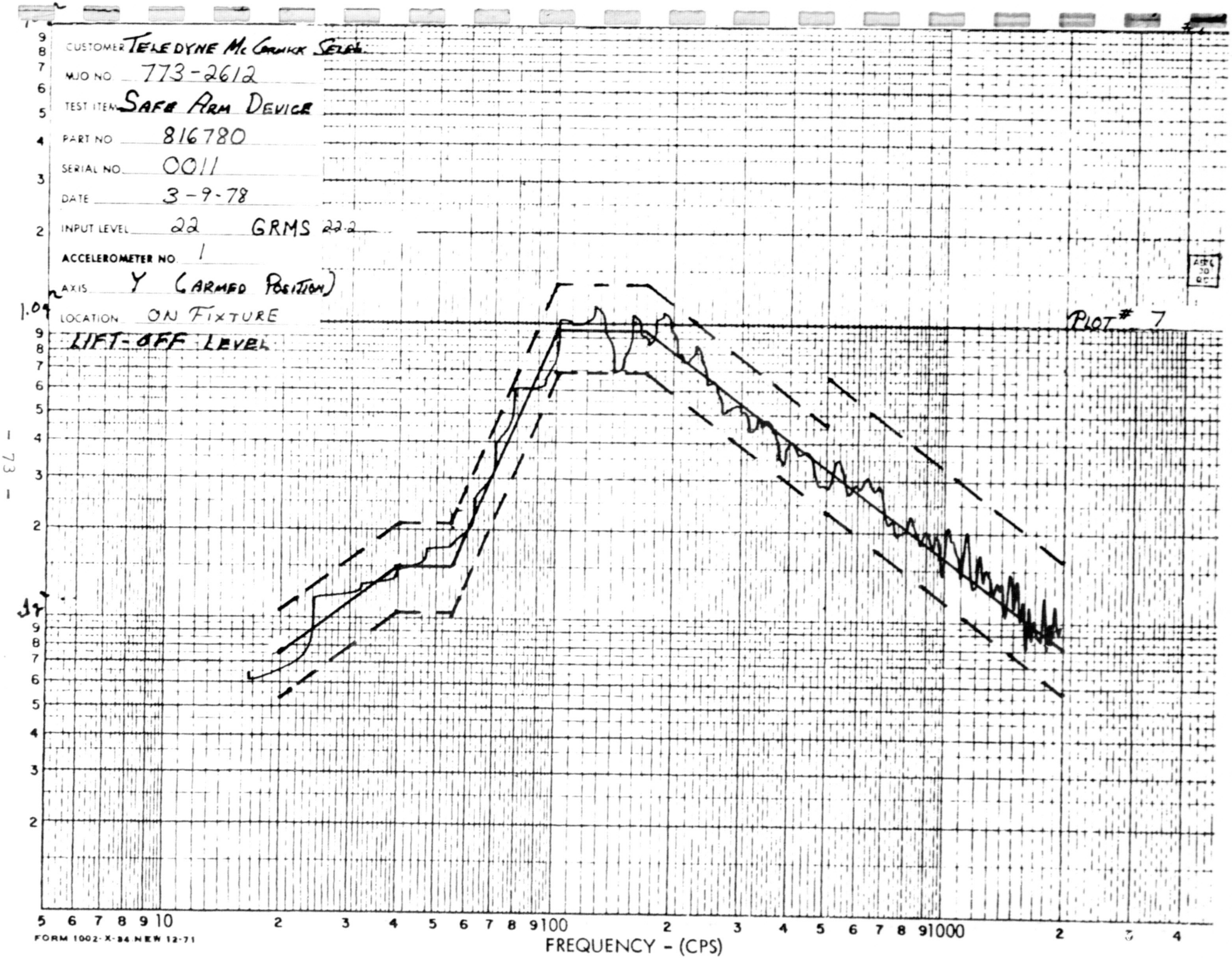
LIFT-OFF LEVEL

PLOT # 6



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FORM 1002-X-24 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE ARM DEVICE
PART NO 816780
SERIAL NO 0011
DATE 3-9-78
INPUT LEVEL 22 GRMS 22.2
ACCELEROMETER NO 1
AXIS Y (ARMED POSITION)
LOCATION ON FIXTURE
LIFT-OFF LEVEL
PLOT # 7
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0012

DATE 3-9-78

INPUT LEVEL 22 GRMS ~~22.2~~

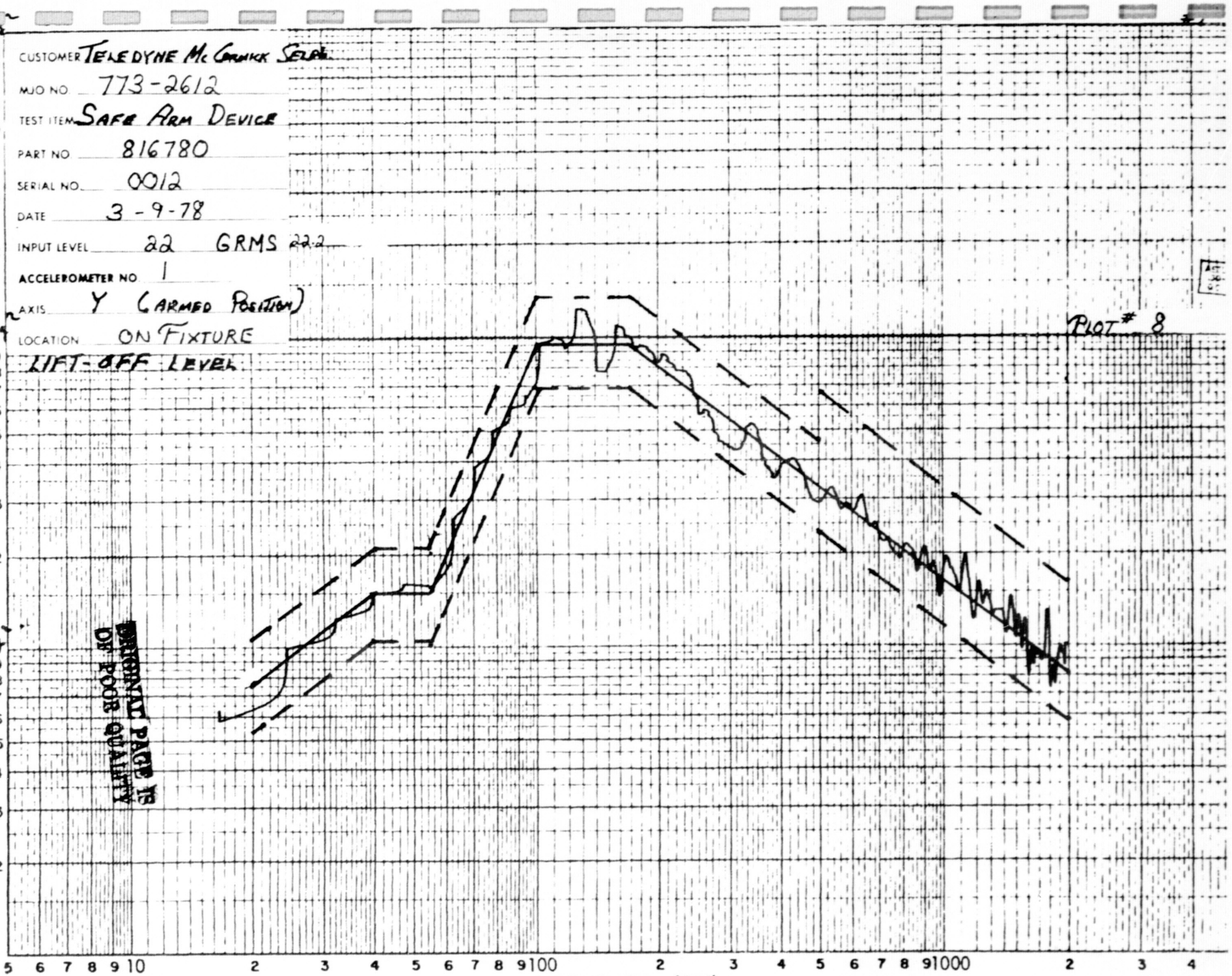
ACCELEROMETER NO 1

AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

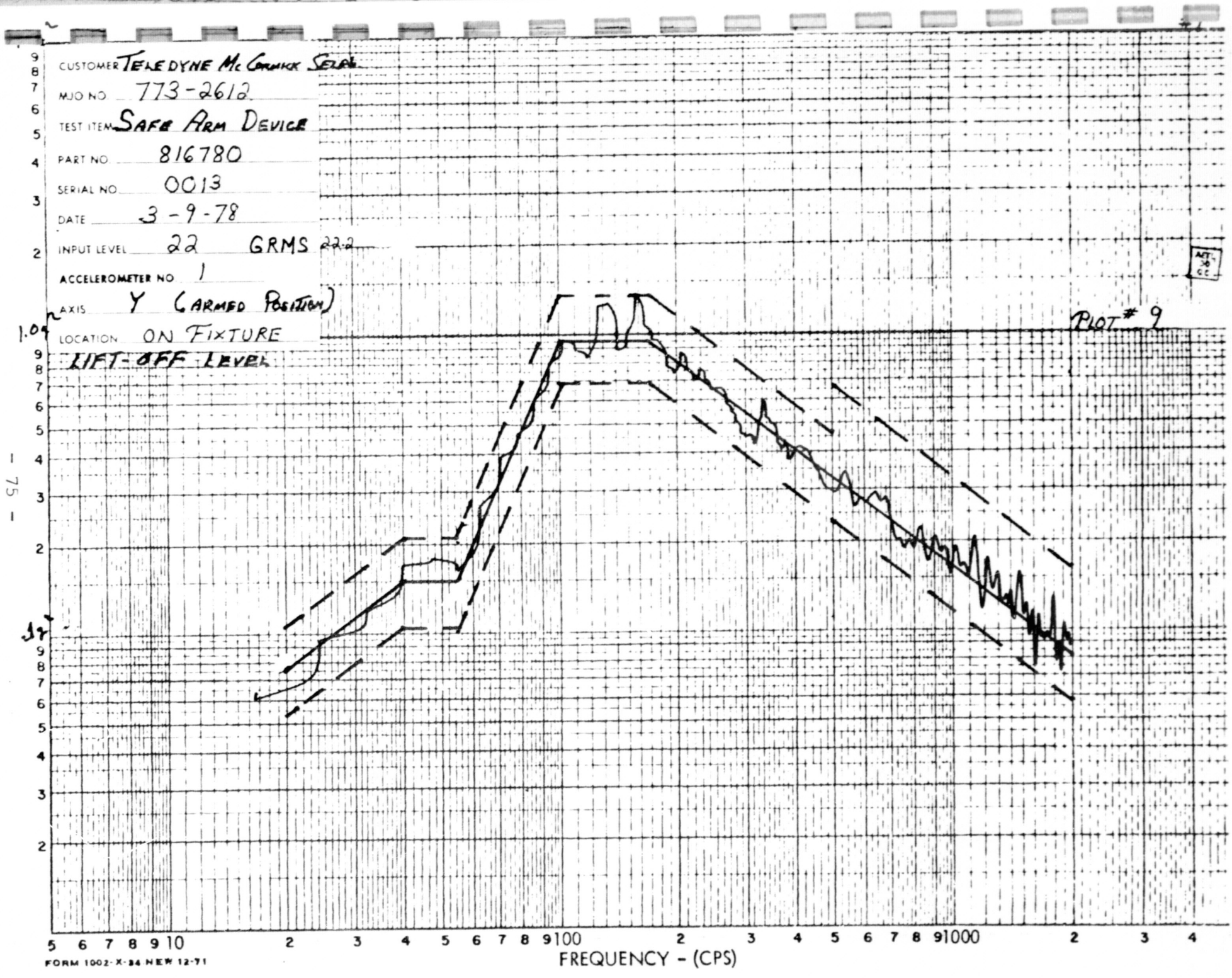
LIFT-OFF LEVEL

PLOT # 8



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FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE ARM DEVICE
PART NO 816780
SERIAL NO 0013
DATE 3-9-78
INPUT LEVEL 22 GRMS 22.2
ACCELEROMETER NO 1
AXIS Y (ARMED POSITION)
LOCATION ON FIXTURE
LIFT-OFF LEVEL
PLOT # 9
ACT. 50 CC
1.0g
1g
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0014

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

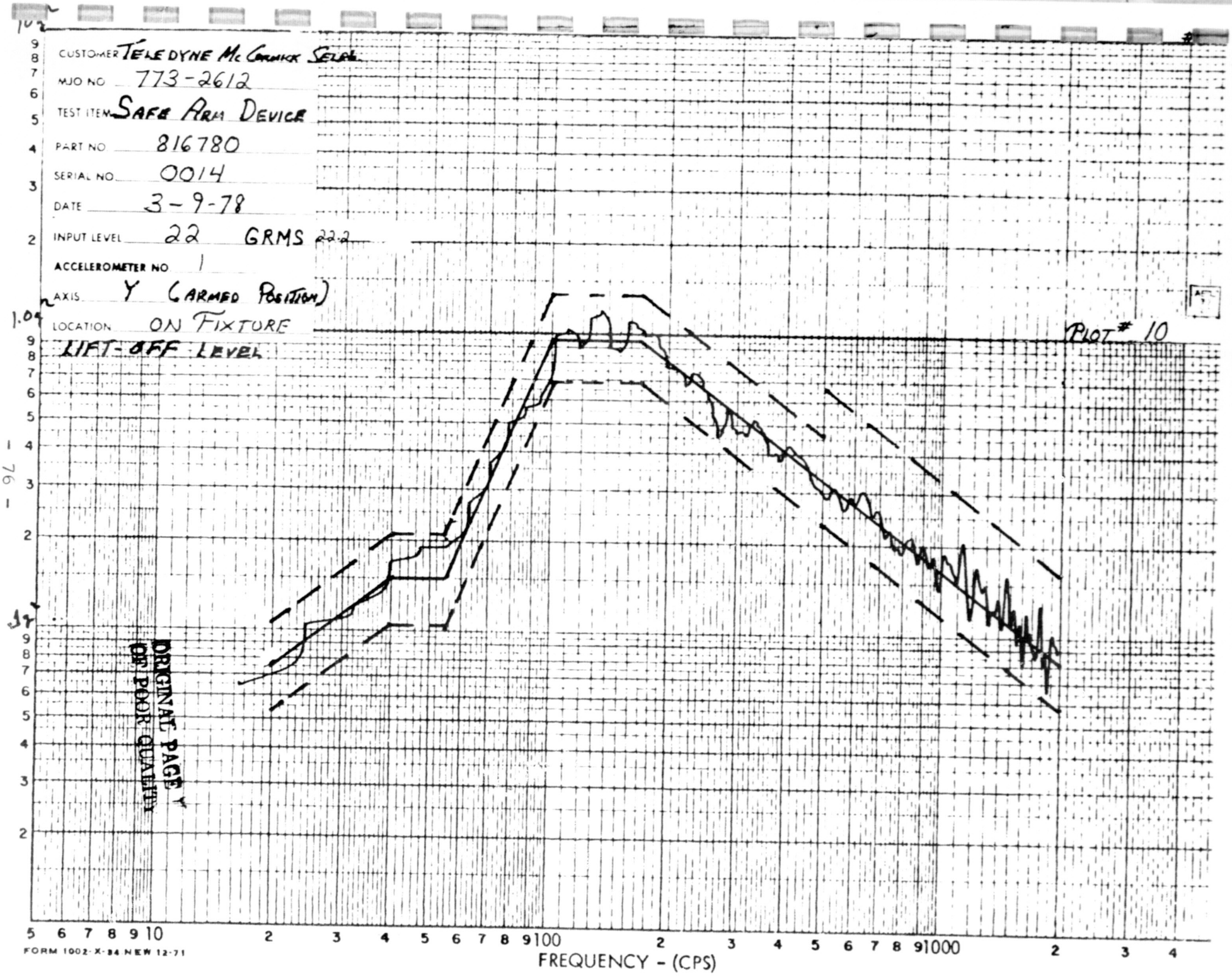
ACCELEROMETER NO 1

AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

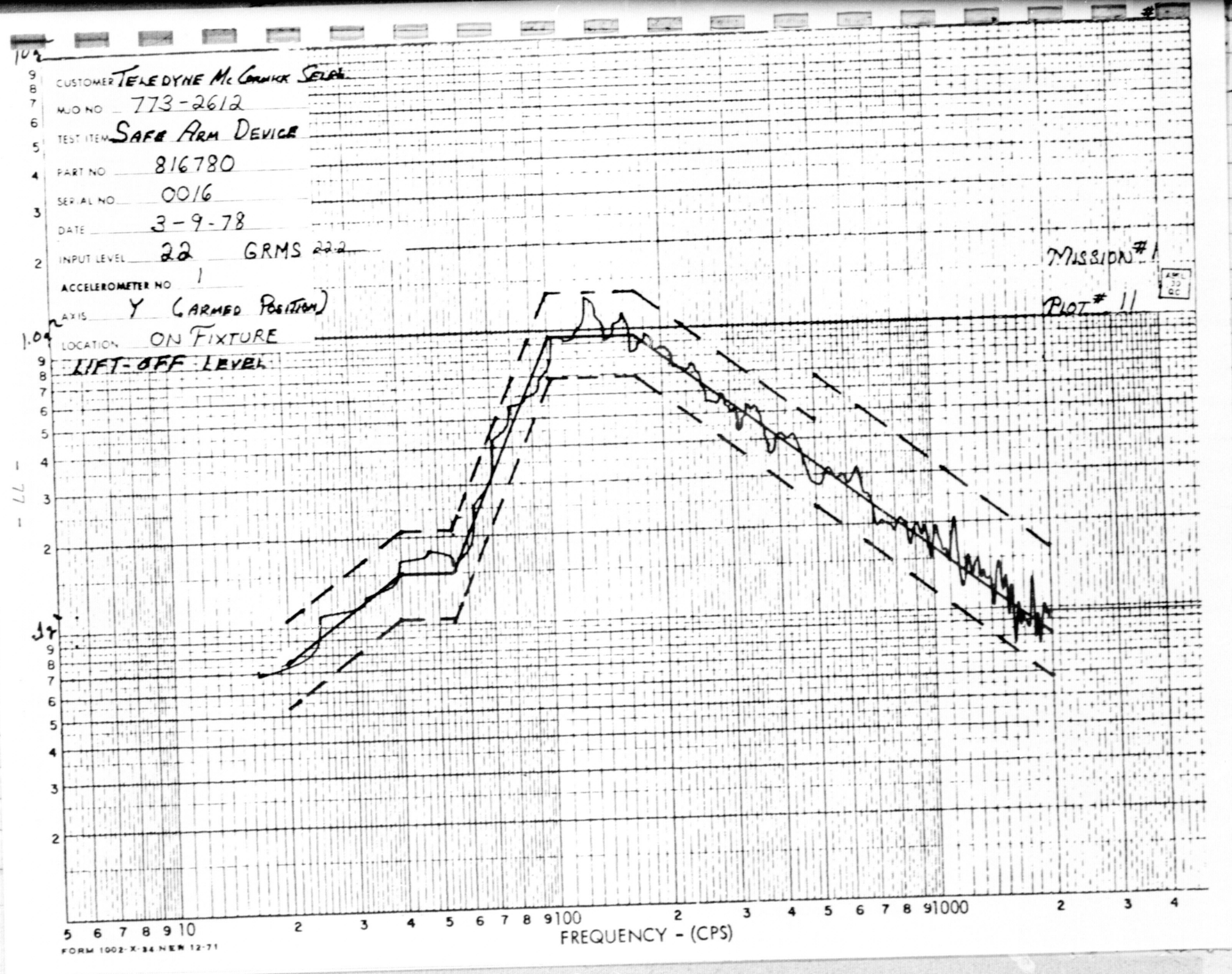
LIFT-OFF LEVEL

PLOT # 10



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FORM 1002-X-84 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
M.O. NO 773-2612
TEST ITEM SAFE ARM DEVICE
PART NO 816780
SERIAL NO 0016
DATE 3-9-78
INPUT LEVEL 22 GRMS 22.2
ACCELEROMETER NO 1
AXIS Y (ARMED POSITION)
LOCATION ON FIXTURE
LIFT-OFF LEVEL
MISSION #1
PLOT # 11
FREQUENCY - (CPS)
FORM 1002-X-34 NEN 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0017

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

ACCELEROMETER NO 1

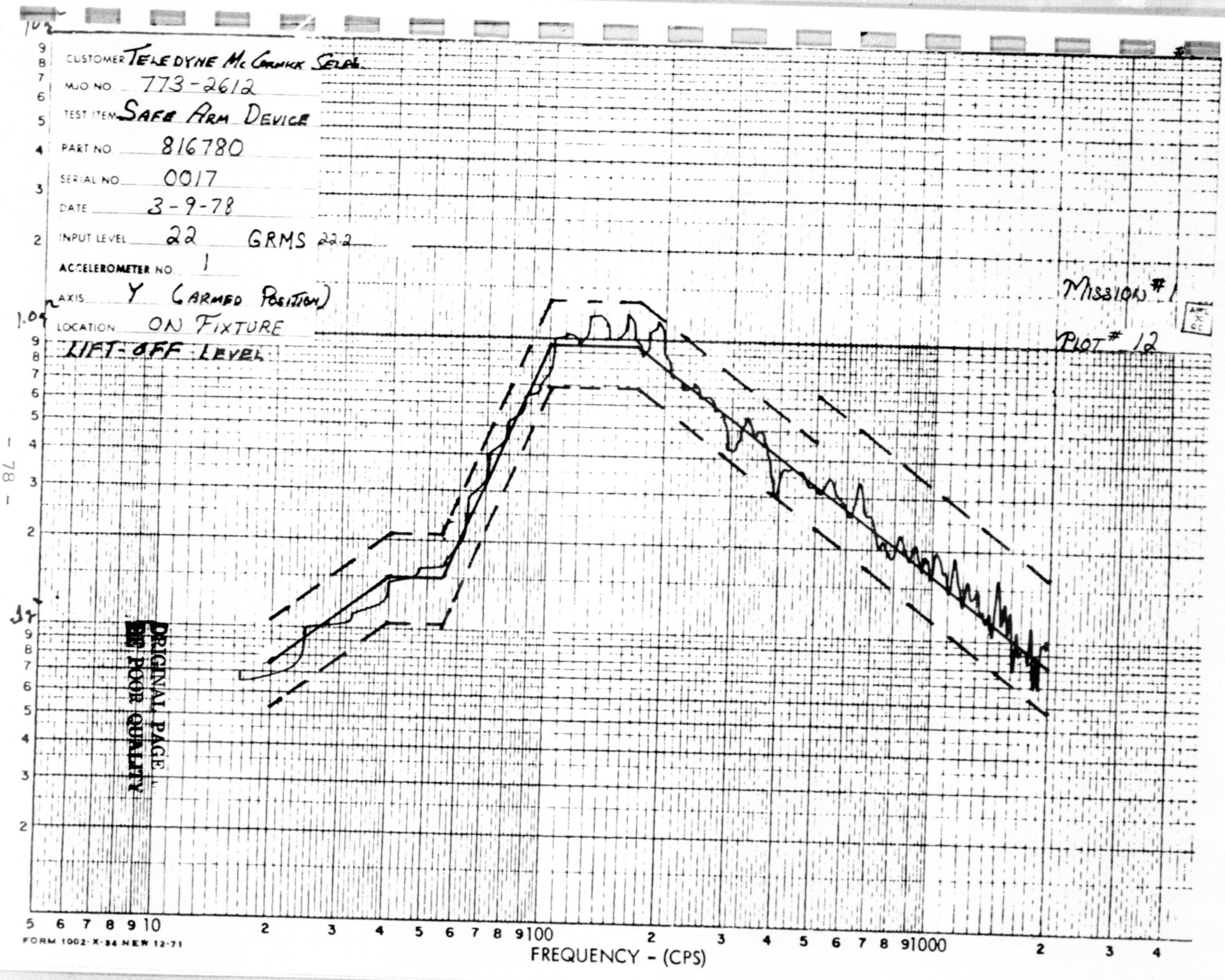
AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

LIFT-OFF LEVEL

MISSION # 1

PLOT # 12



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FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0017

DATE 3-9-78

INPUT LEVEL 22 GRMS ~~22.2~~

ACCELEROMETER NO 1

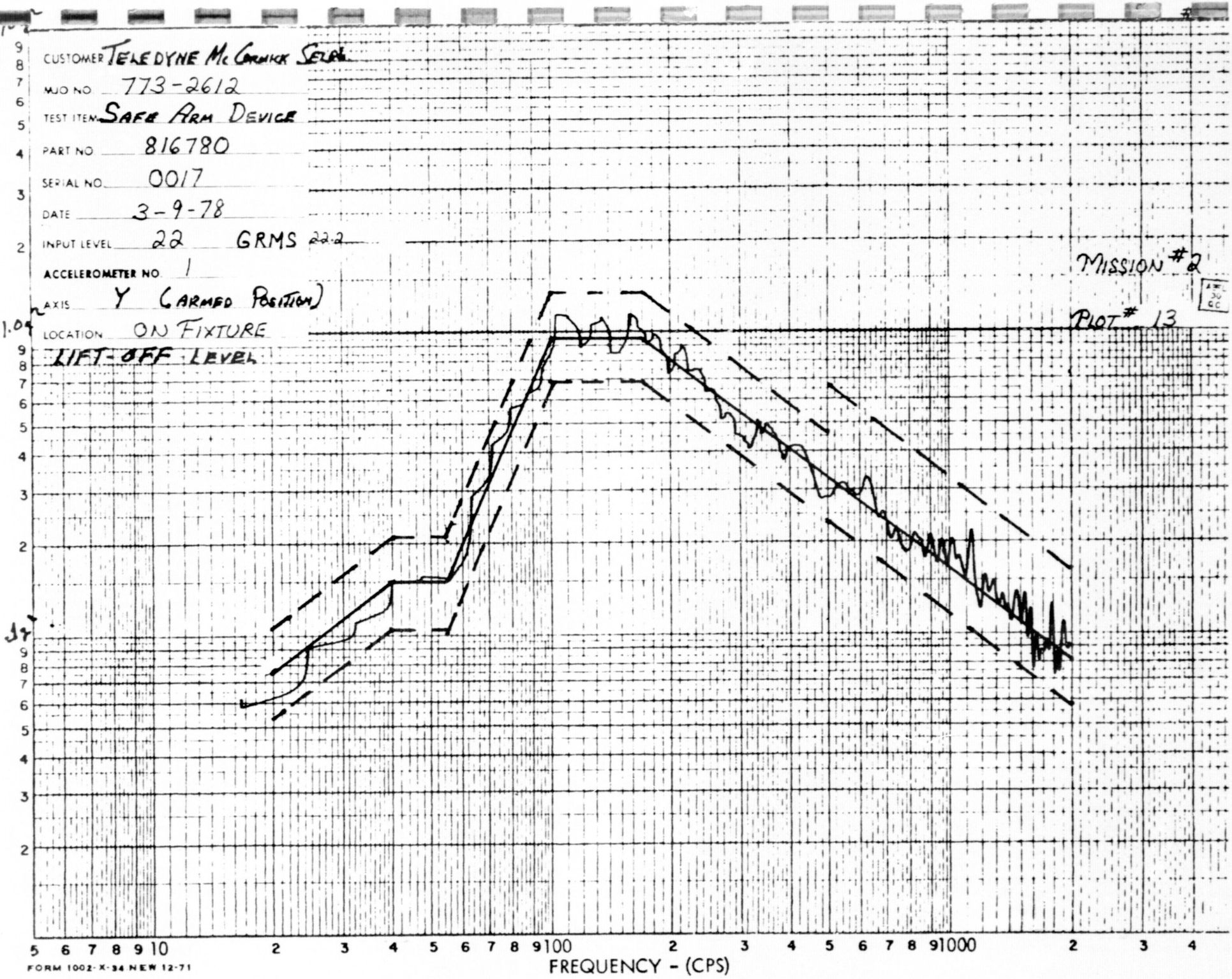
AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

LIFT-OFF LEVEL

MISSION #2

PLOT # 13



FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0018

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

ACCELEROMETER NO 1

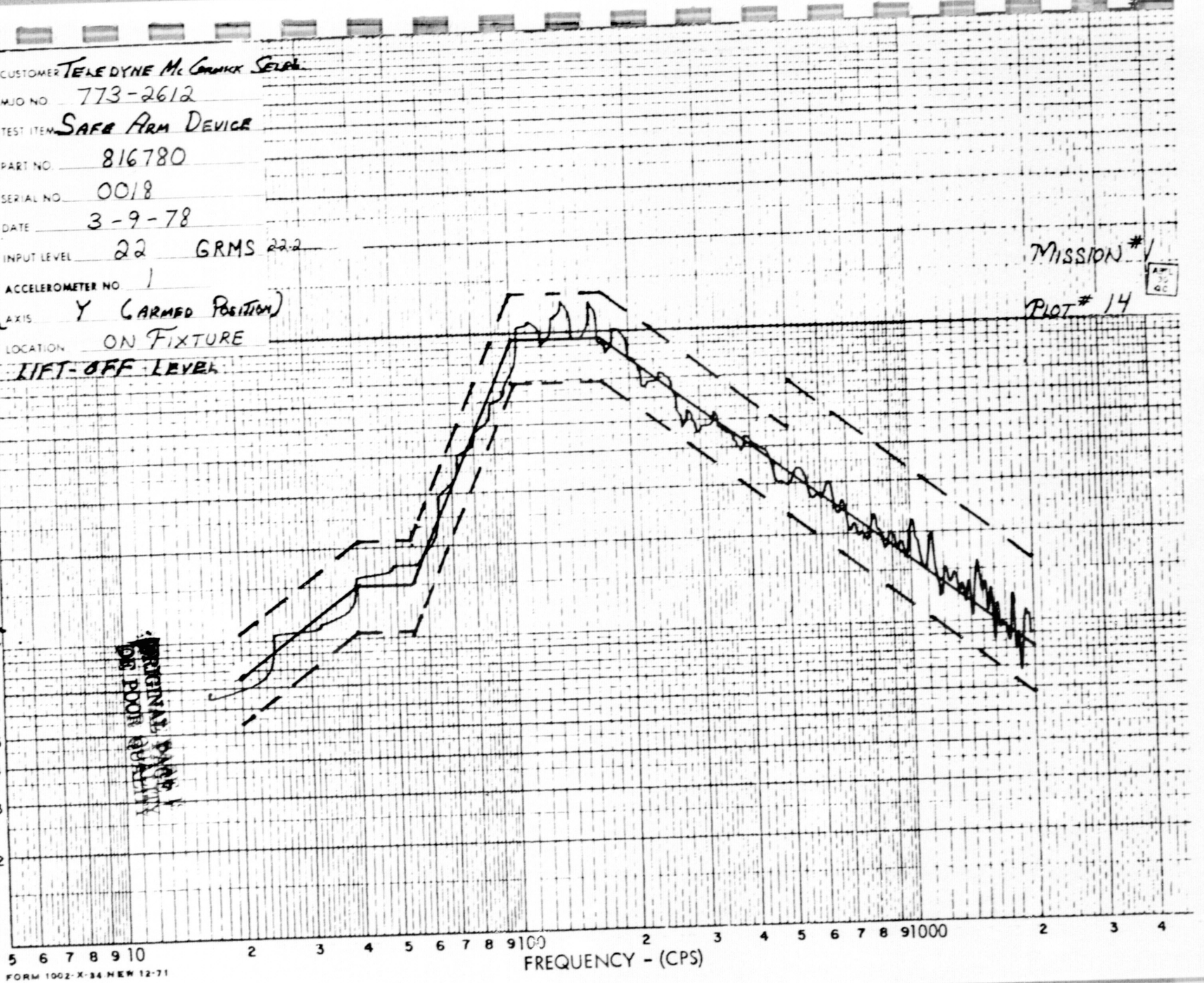
AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

LIFT-OFF LEVEL

MISSION #1

PLOT # 14



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FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO. 816780

SERIAL NO. 0018

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

ACCELEROMETER NO. 1

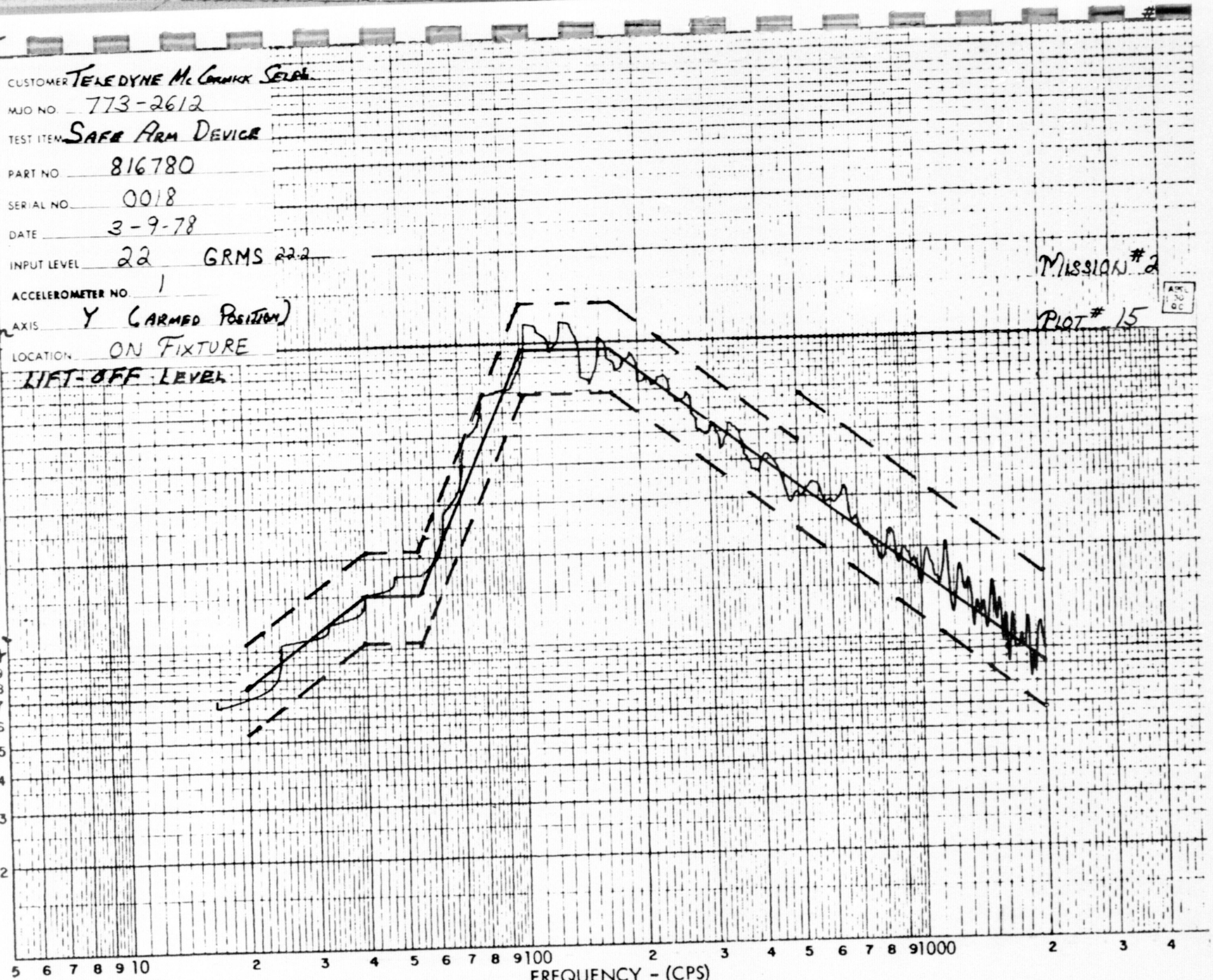
AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

LIFT-OFF LEVEL

MISSION #2

PLOT # 15



FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO. 816780

SERIAL NO. 0019

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

ACCELEROMETER NO 1

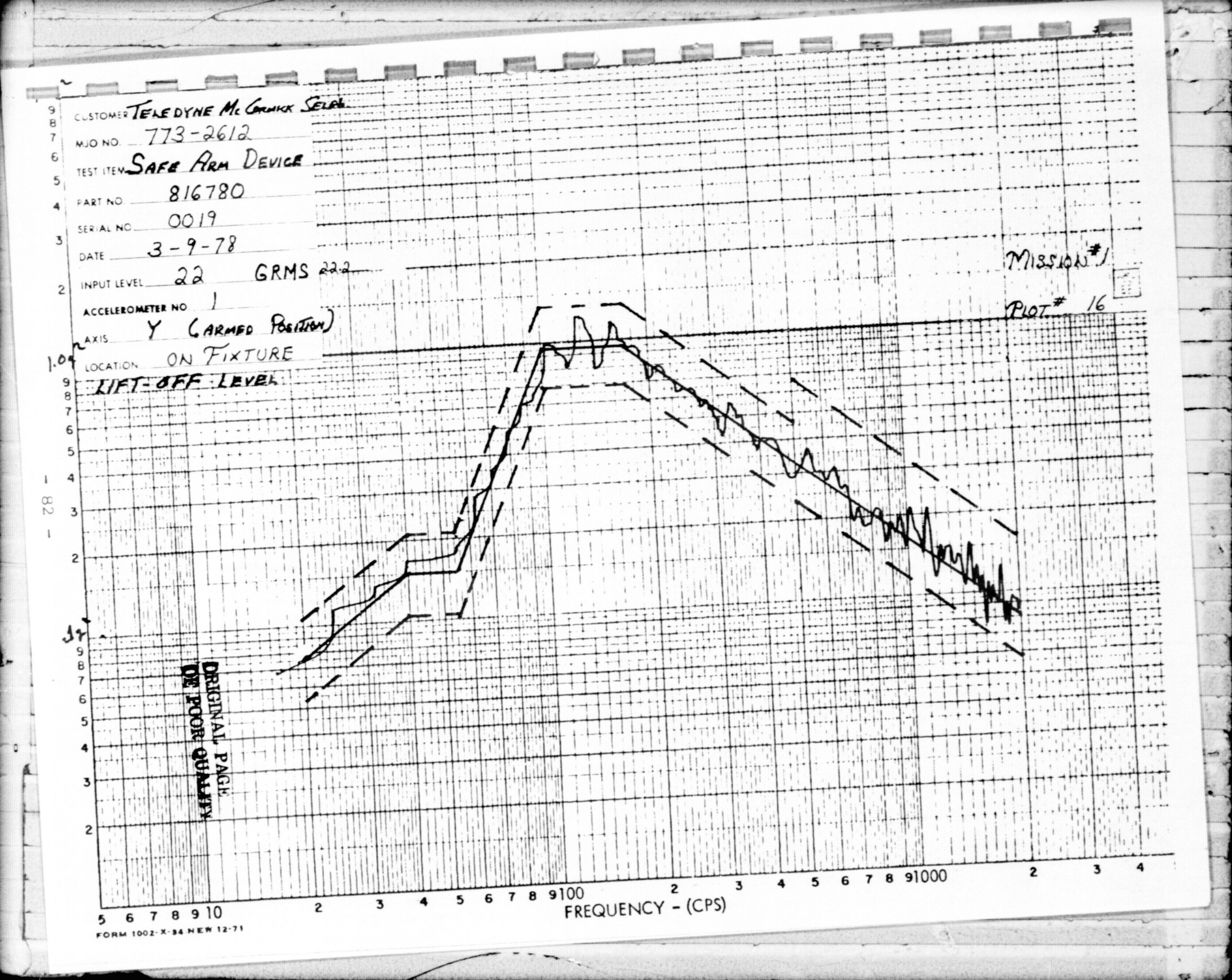
AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

LIFT-OFF LEVEL

MISSION #1

PLOT # 16



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FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0019

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

ACCELEROMETER NO 1

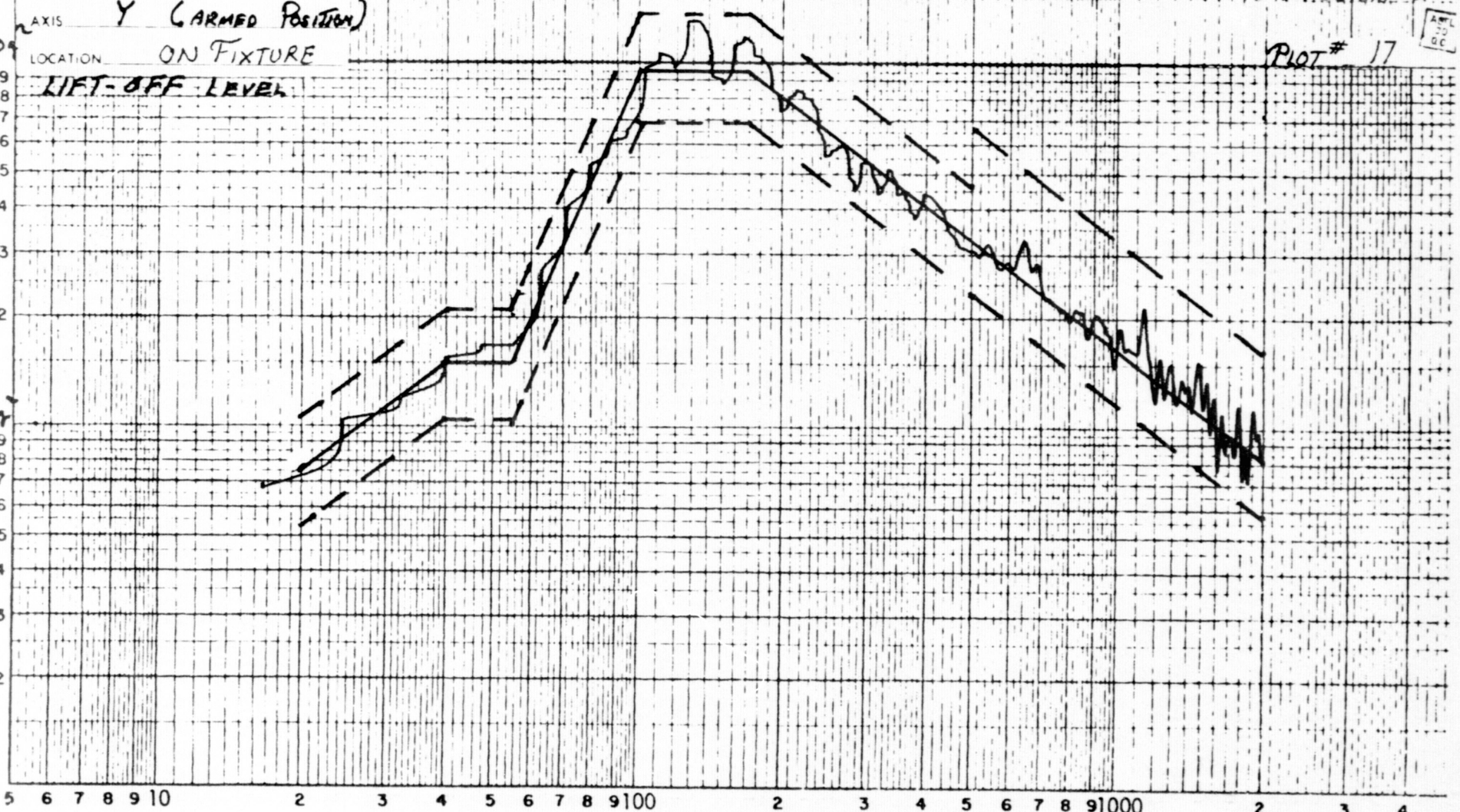
AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

LIFT-OFF LEVEL

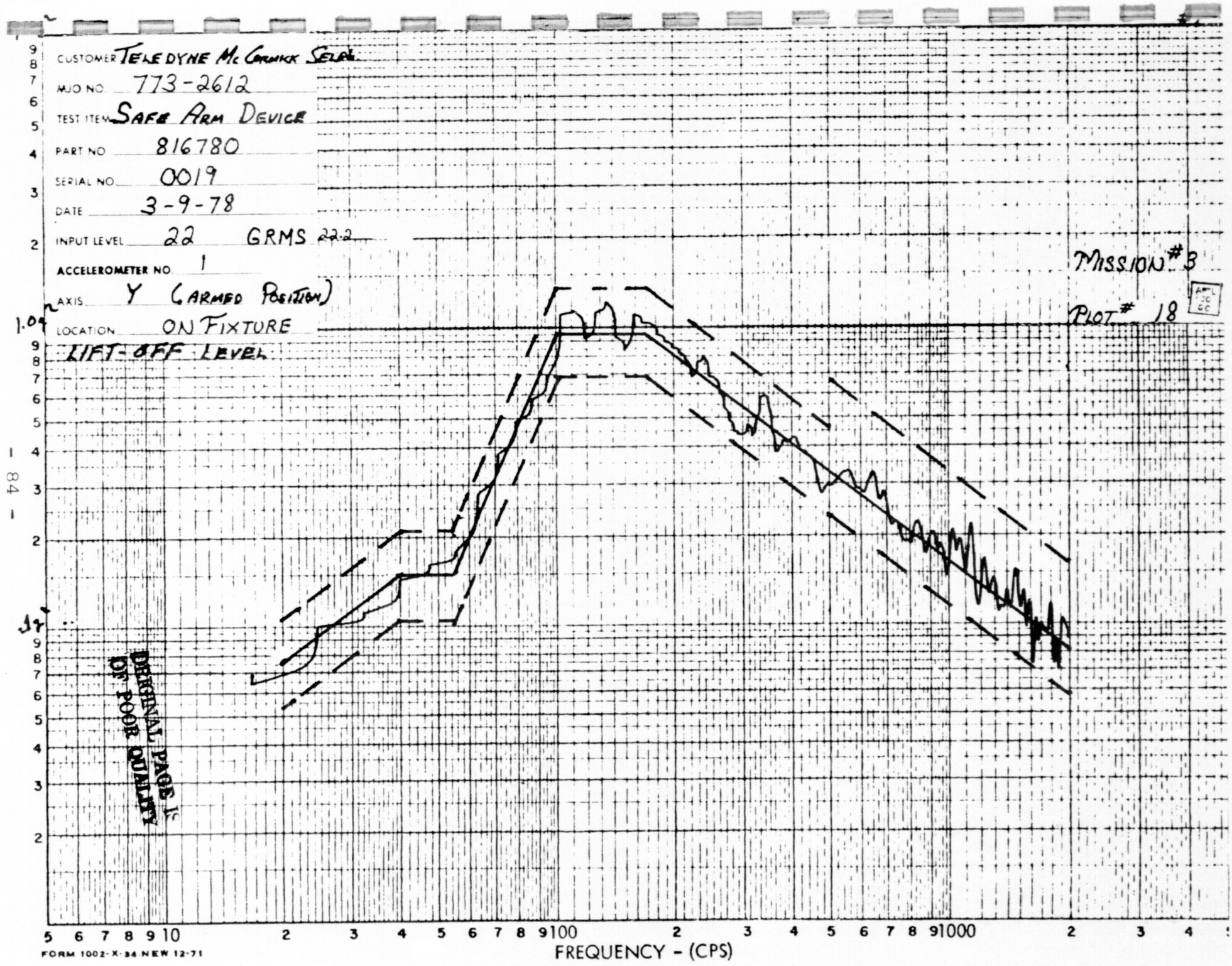
MISSION #2

PLOT # 17

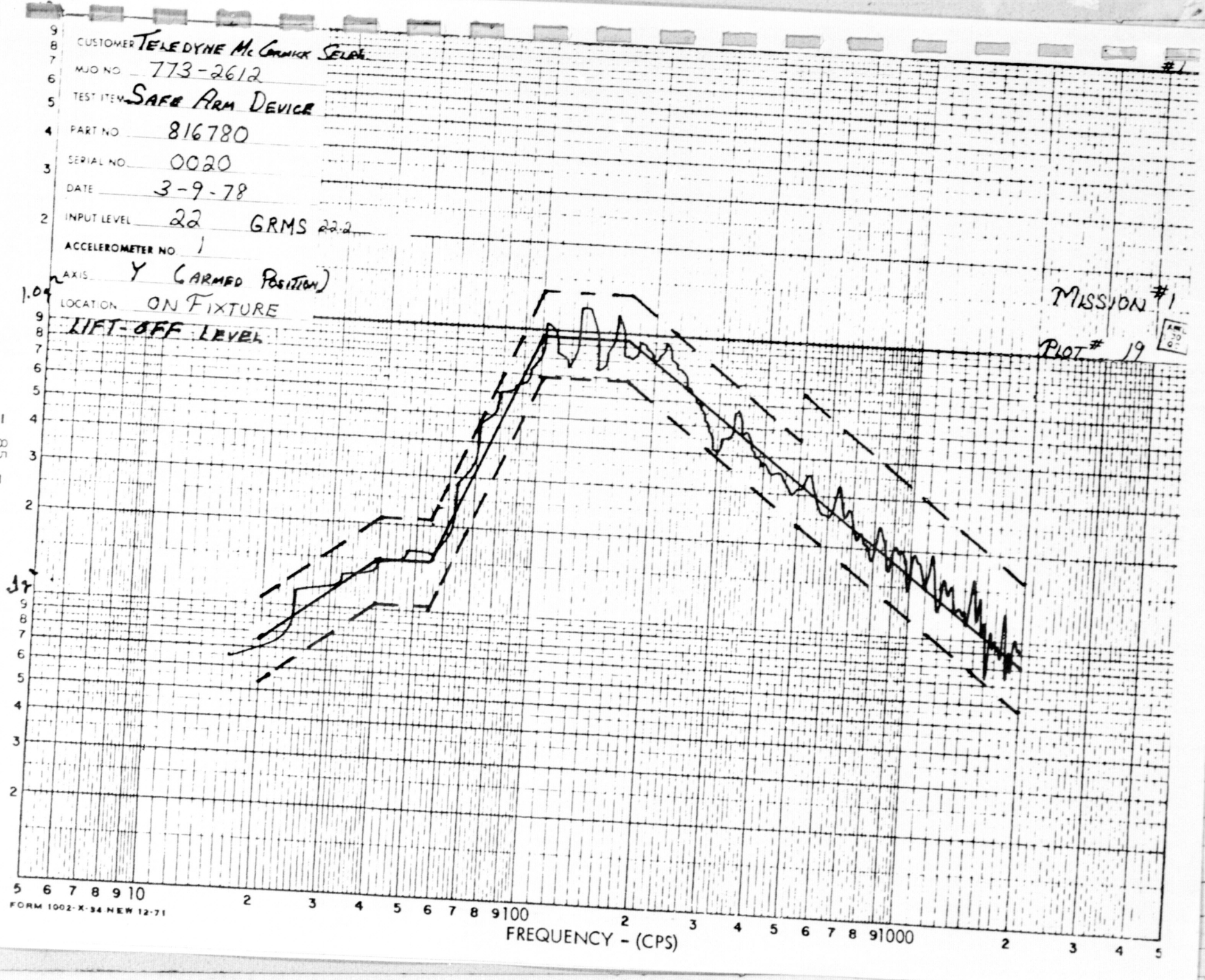


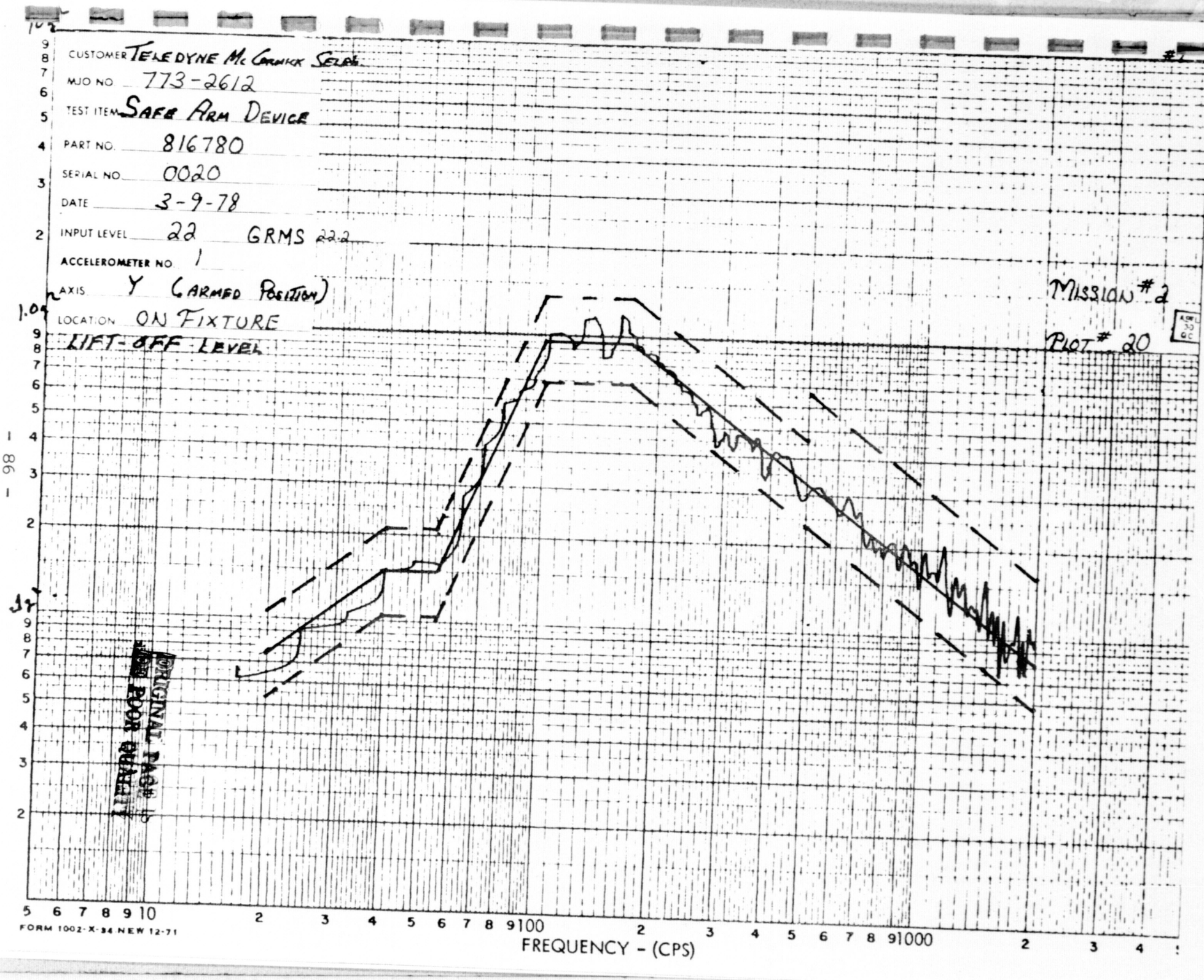
FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71



ORIGINAL PAGE IS OF POOR QUALITY


CUSTOMER TELEDYNE Mc CORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE ARM DEVICE
PART NO 816780
SERIAL NO 0020
DATE 3-9-78
INPUT LEVEL 22 GRMS 22.2
ACCELEROMETER NO 1
AXIS Y (ARMED POSITION)
LOCATION ON FIXTURE
LIFT-OFF LEVEL
MISSION #1
PLOT # 19
#1
1.0
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE ARM DEVICE
PART NO. 816780
SERIAL NO. 0020
DATE 3-9-78
INPUT LEVEL 22 GRMS 22.2
ACCELEROMETER NO. 1
AXIS Y (ARMED POSITION)
LOCATION ON FIXTURE
LIFT-OFF LEVEL
MISSION #2
PLOT # 20
ORIGINAL PAGE IS POOR QUALITY
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE ARM DEVICE

PART NO 816780

SERIAL NO 0020

DATE 3-9-78

INPUT LEVEL 22 GRMS 22.2

ACCELEROMETER NO 1

AXIS Y (ARMED POSITION)

LOCATION ON FIXTURE

LIFT-OFF LEVEL

MISSION #3

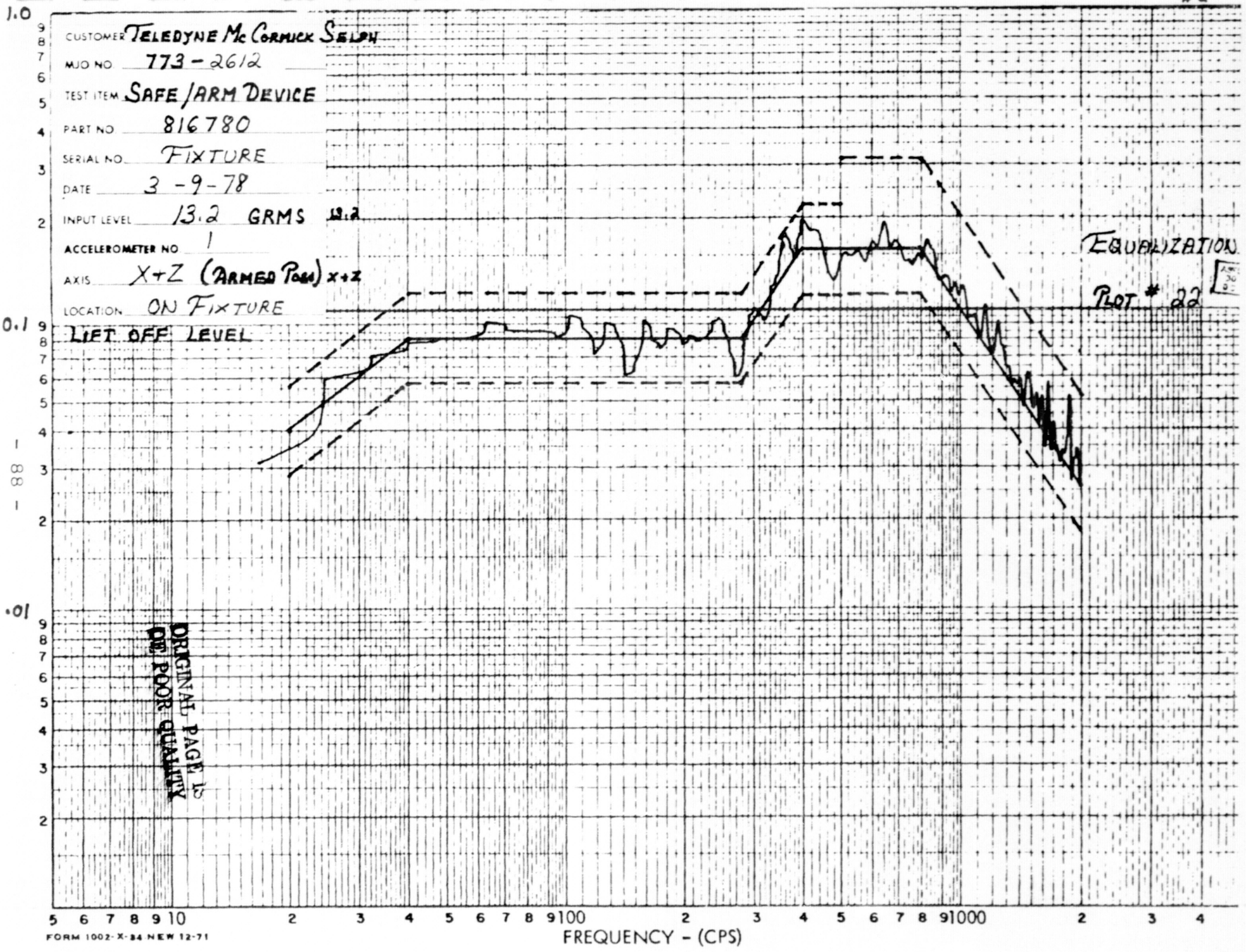
PLOT # 21

#2

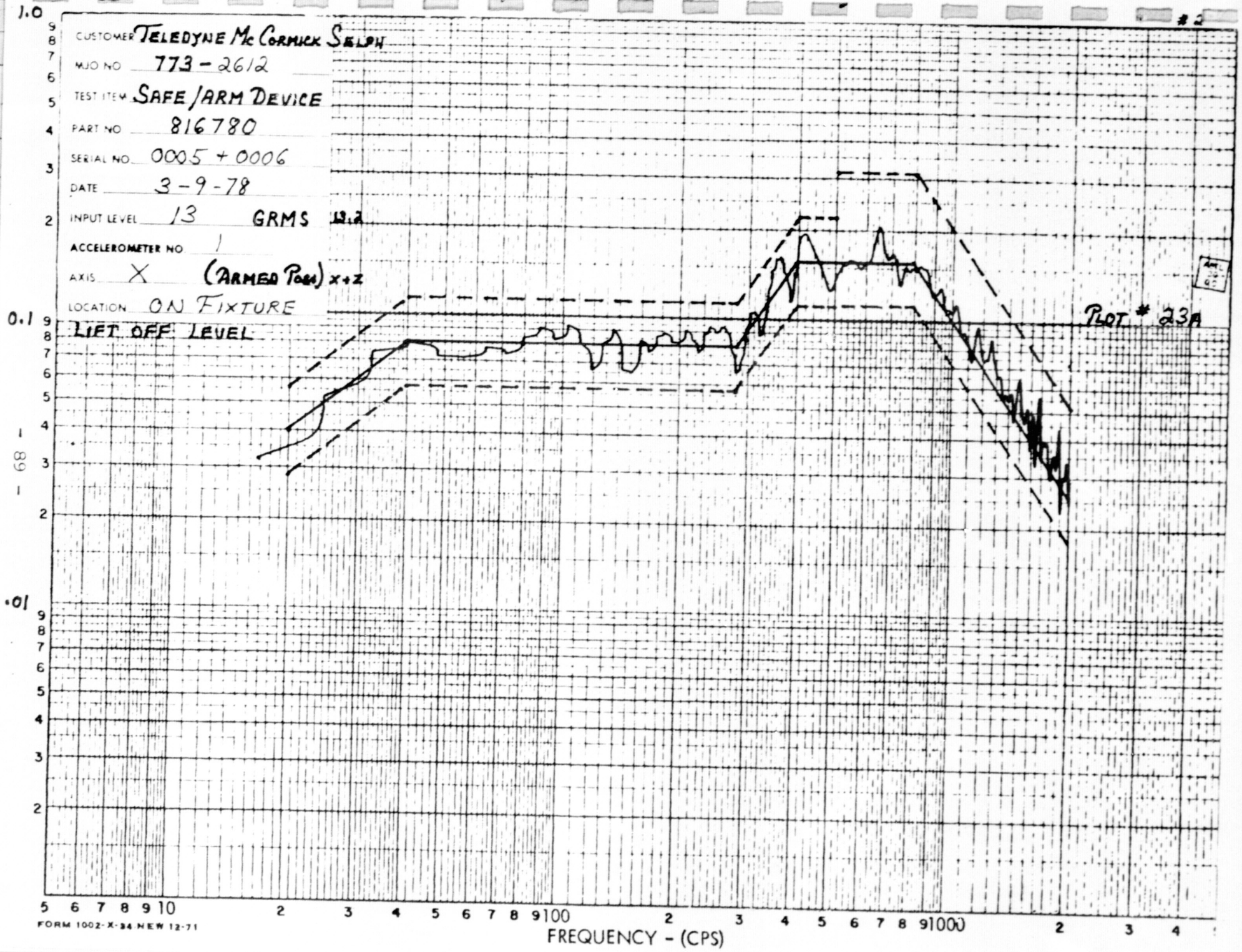
G²/Hz

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71



ORIGINAL PAGE IS
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CUSTOMER TELEDYNE Mc CORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0005 + 0006
DATE 3-9-78
INPUT LEVEL 13 GRMS
ACCELEROMETER NO 1
AXIS X (ARMED Pos) x+z
LOCATION ON FIXTURE
LIFT OFF LEVEL
PLOT # 23A
1.0
0.1
.01
1 89 1
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MOD NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SER A NO 0006

DATE 3-9-78

INPUT LEVEL 22.5 GRMS 13.2

ACCELEROMETER NO 2

AXIS X (ARMED PASS) X+Z

LOCATION ON S/A DEVICE

LIFT OFF LEVEL

PEAK AT 2621 HZ

PLOT # 238

ARM X OC

0.1

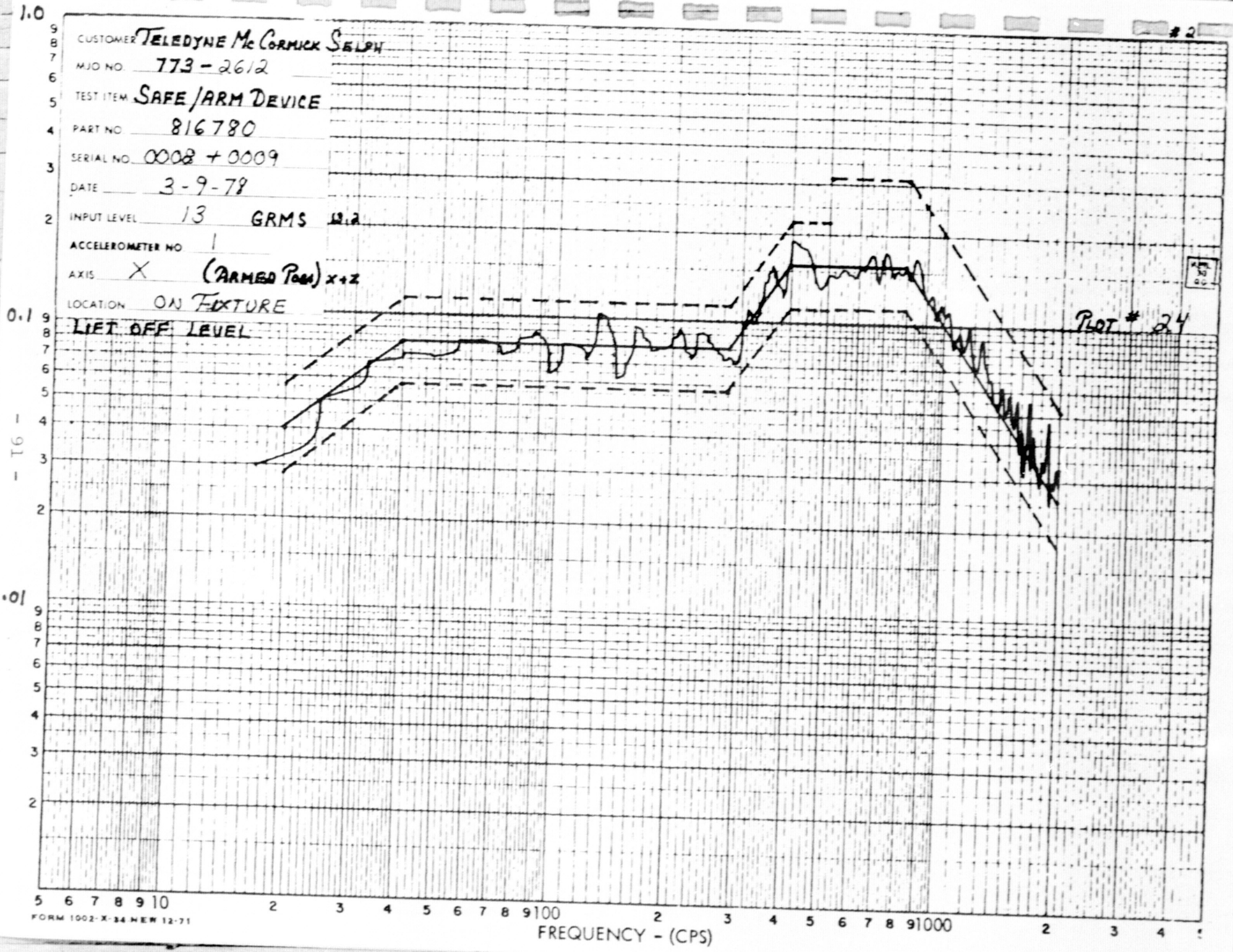
.01

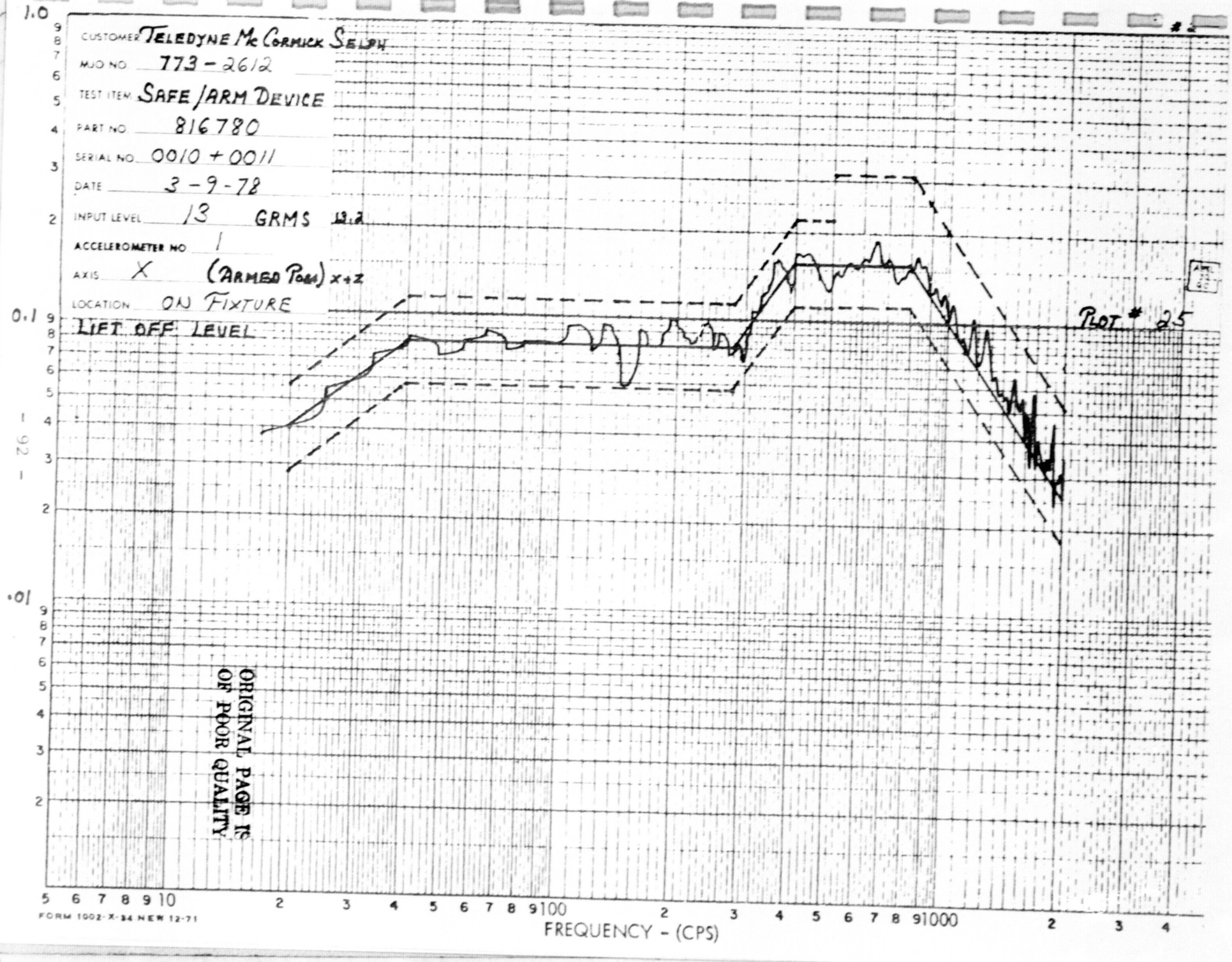
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

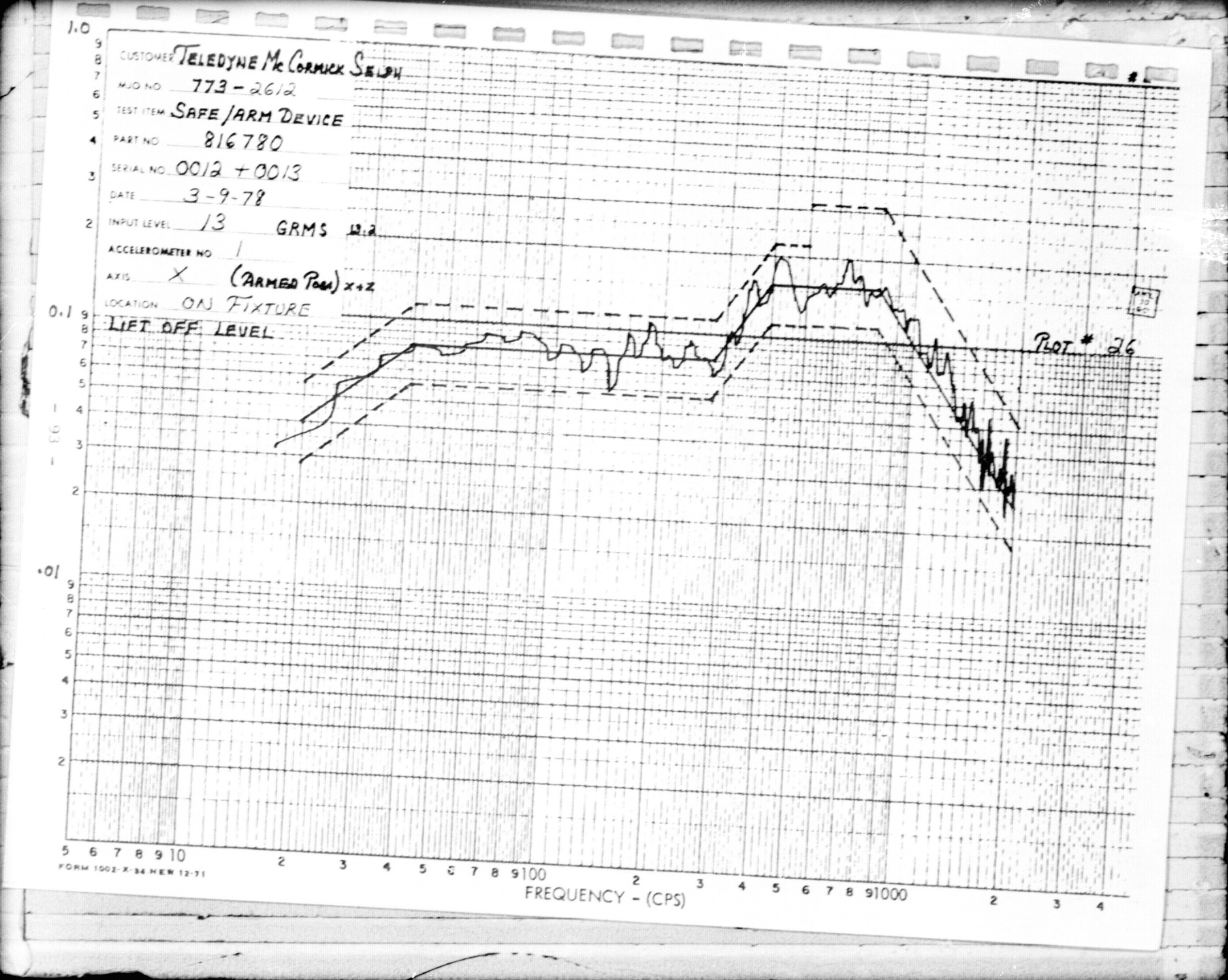
FORM 1002-X-34 NEW 12-71

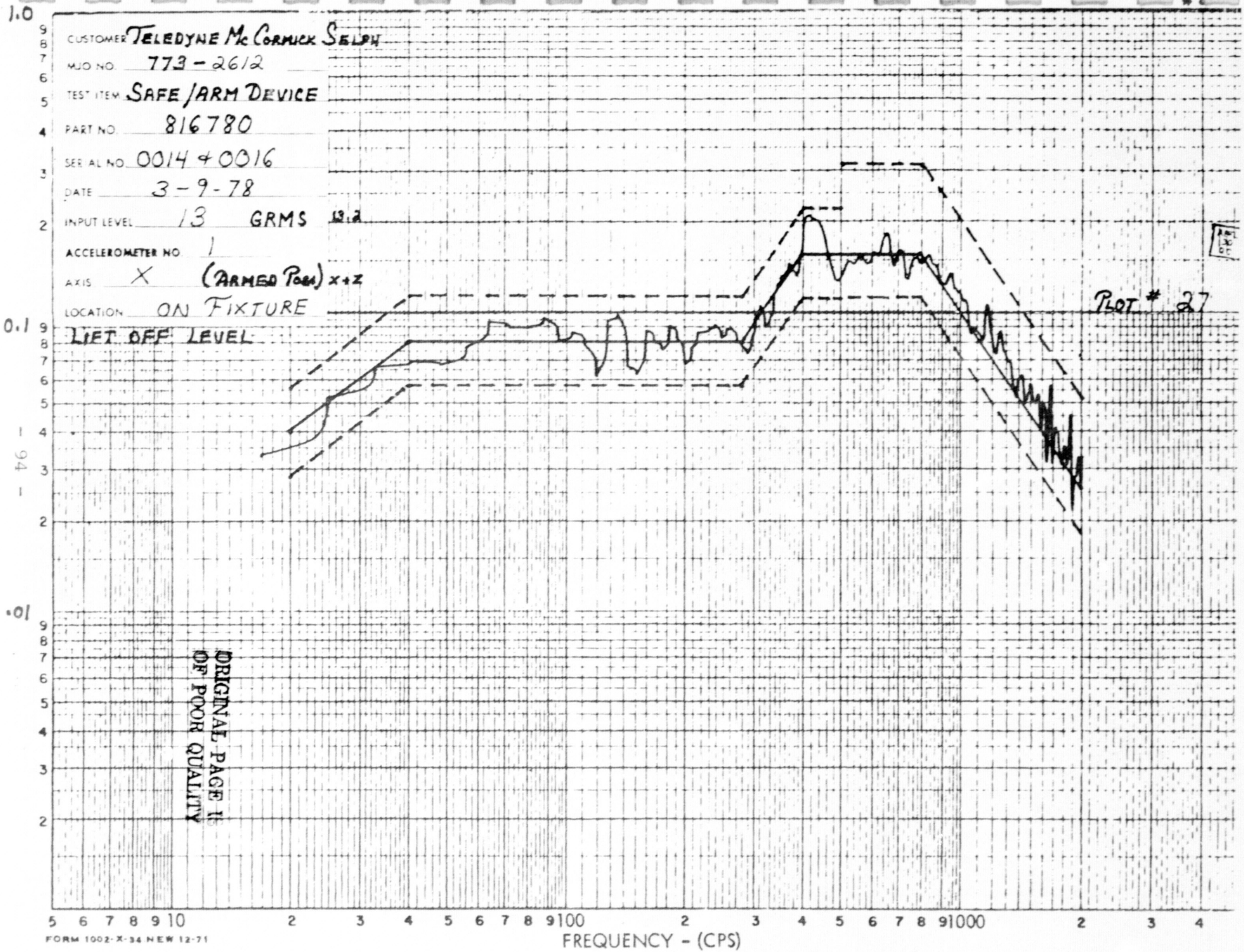
ORIGINAL PAGE IS
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CUSTOMER TELEDYNE Mc CORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO. 0008 + 0009
DATE 3-9-78
INPUT LEVEL 13 GRMS 12.2
ACCELEROMETER NO 1
AXIS X (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
PLOT # 24
2
1.0
0.1
.01
G²/Hz
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

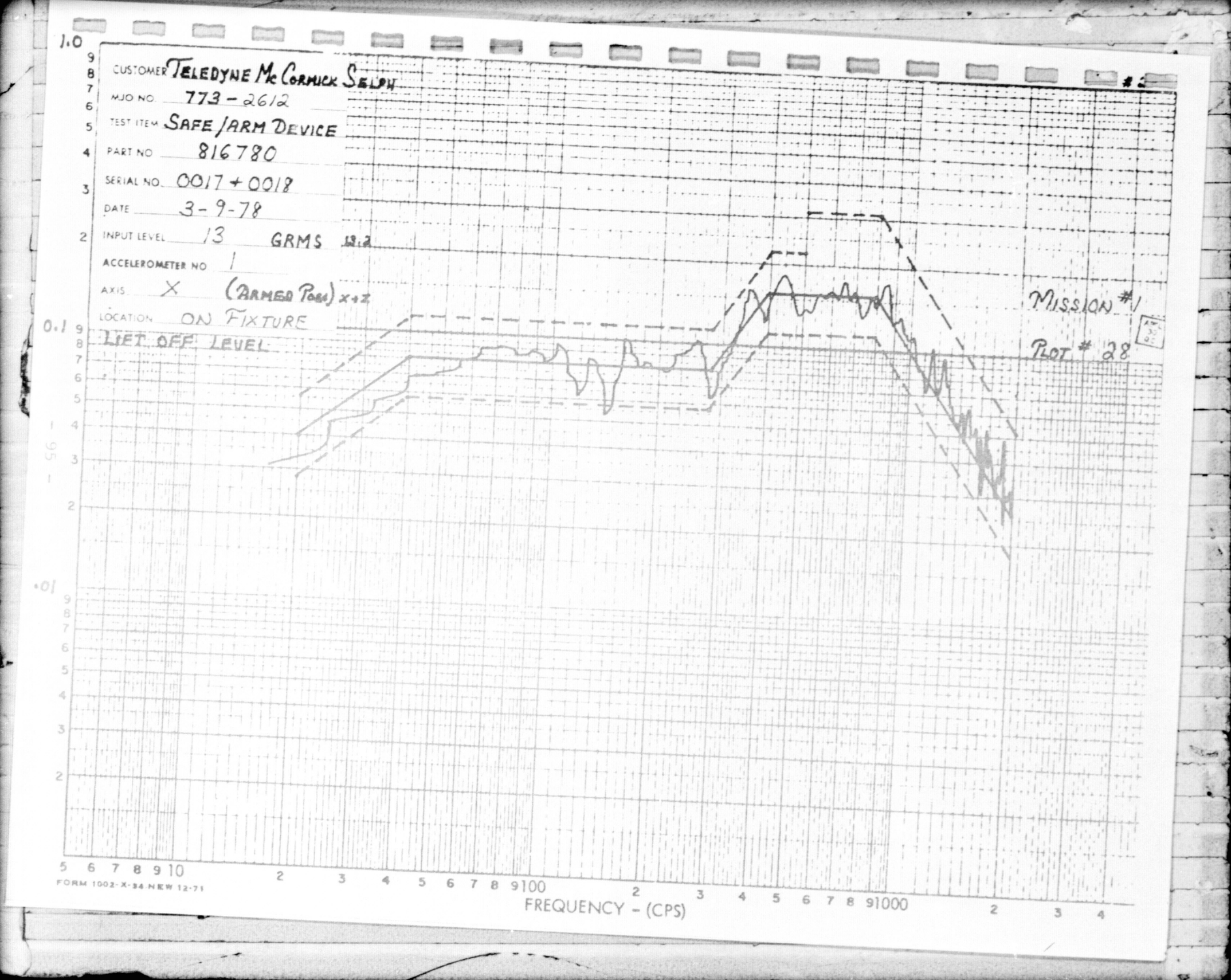


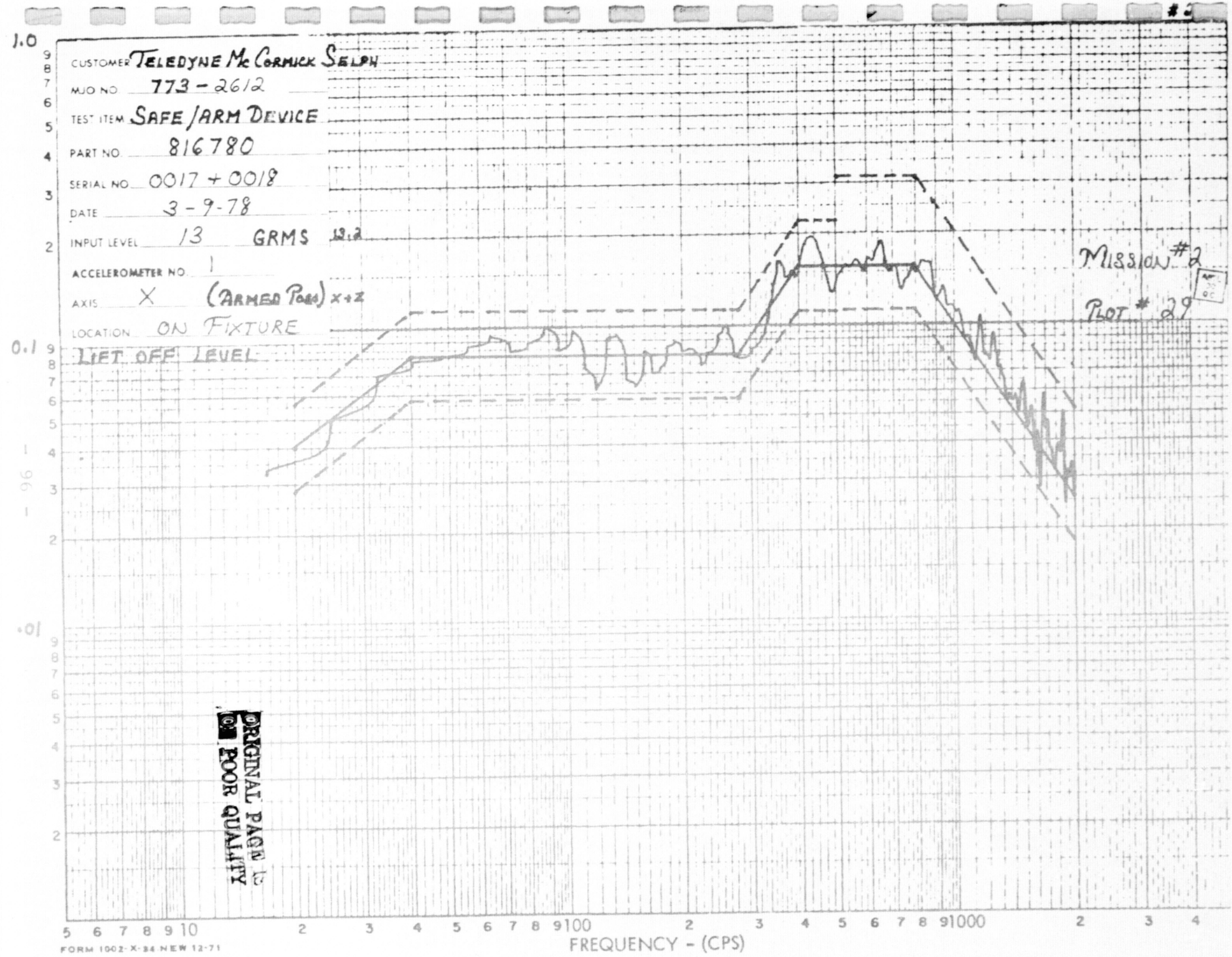
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CUSTOMER TELEDYNE Mc CORMICK SELPH
M.O. NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0012 + 0013
DATE 3-9-78
INPUT LEVEL 13 GRMS 12.2
ACCELEROMETER NO 1
AXIS X (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
PLOT # 26
1.0
0.1
.01
G²/CPS
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-84 REV 12-71

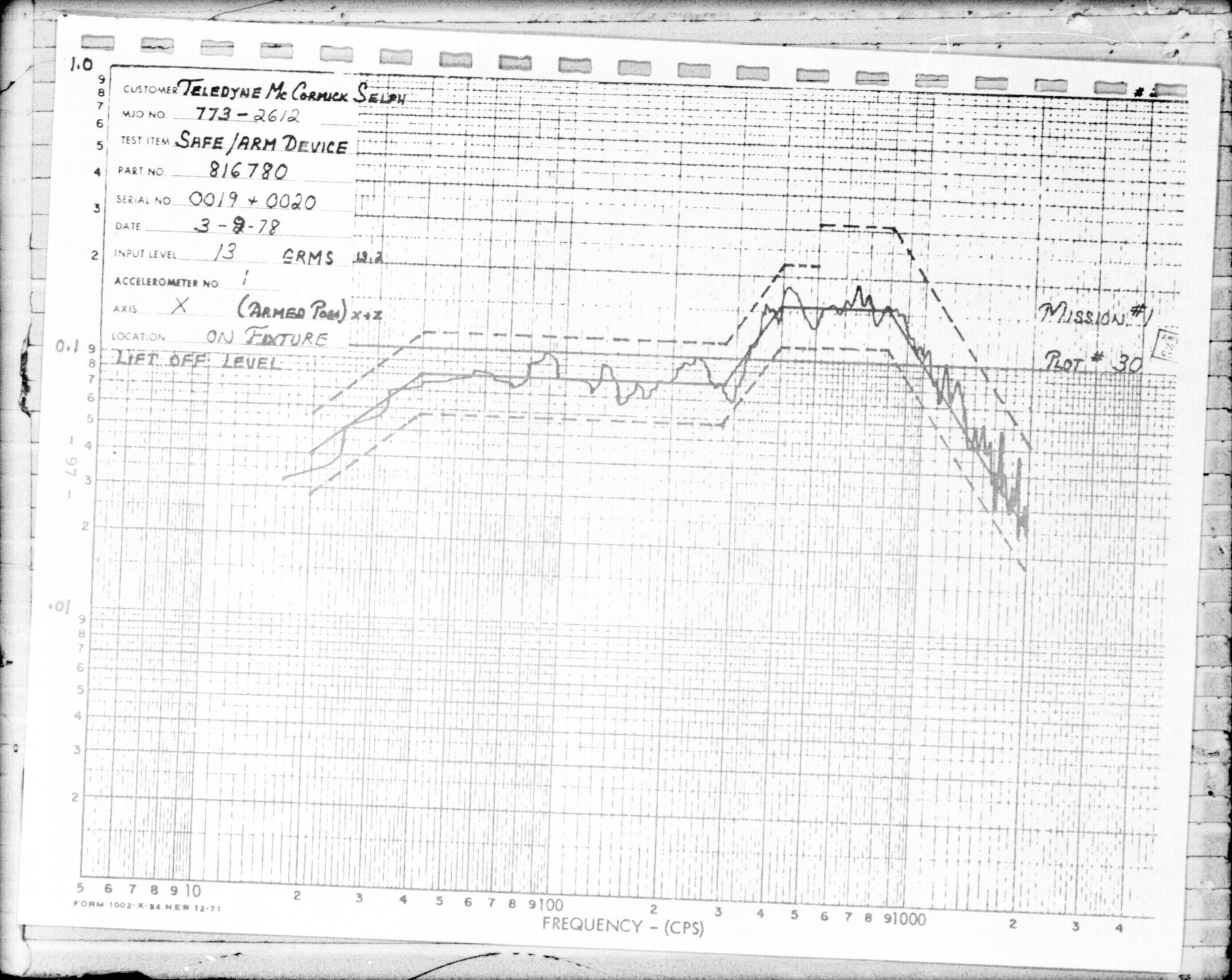


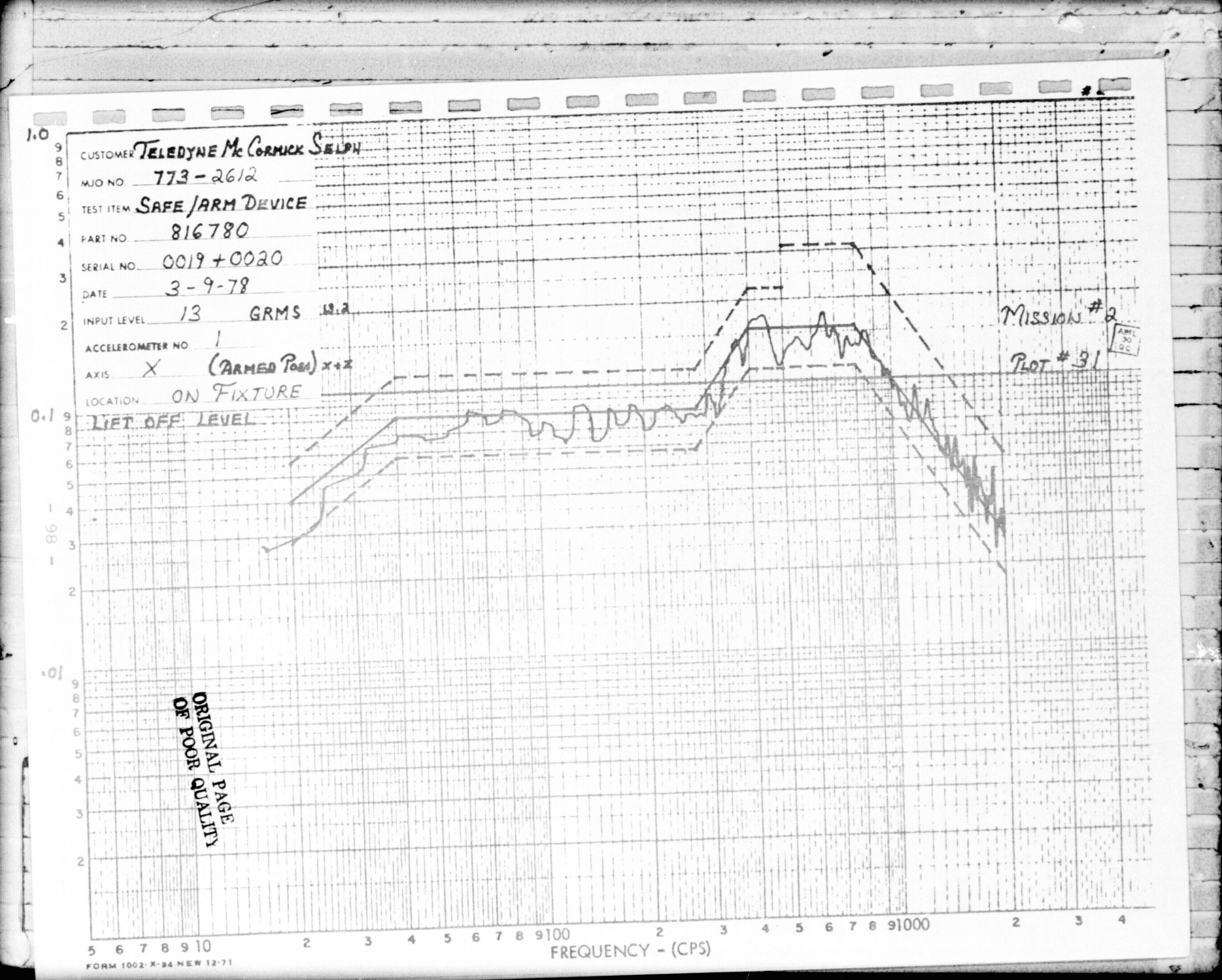
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CUSTOMER TELEDYNE Mc CORMICK SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO. 0017 + 0018
DATE 3-9-78
INPUT LEVEL 13 GRMS 13.2
ACCELEROMETER NO 1
AXIS X (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
MISSION #1
PLOT # 28
1.0
0.1
.01
G's
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

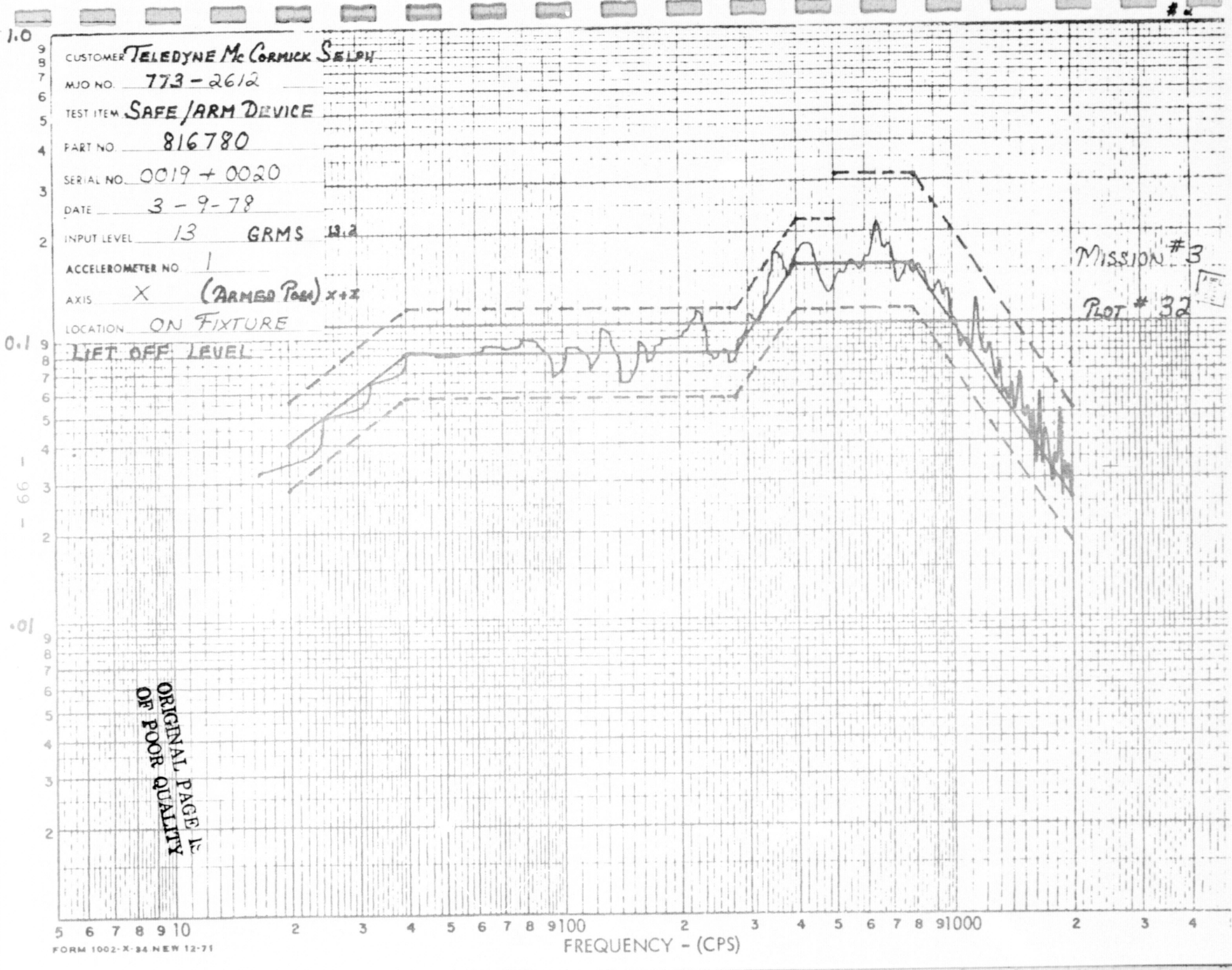


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CUSTOMER TELEDYNE Mc CORMICK SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO. 816780
SERIAL NO. 0019 + 0020
DATE 3-9-78
INPUT LEVEL 13 GRMS 12.2
ACCELEROMETER NO. 1
AXIS X (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
MISSION #1
PLOT # 30
1.0
0.1
.01
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71



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CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0005 + 0006

DATE 3-9-78

INPUT LEVEL 13 GRMS 12.2

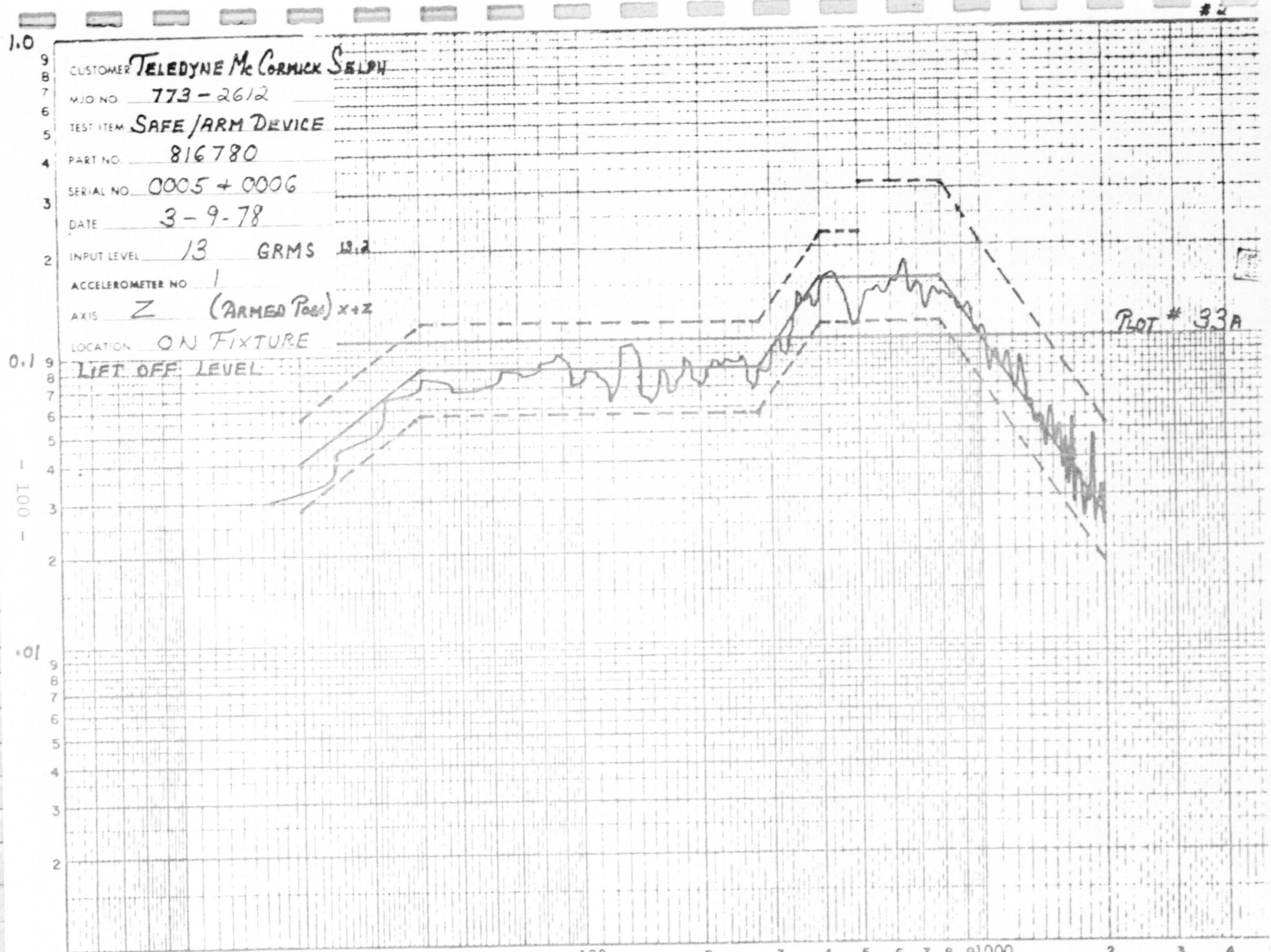
ACCELEROMETER NO 1

AXIS Z (ARMED POS) X+Z

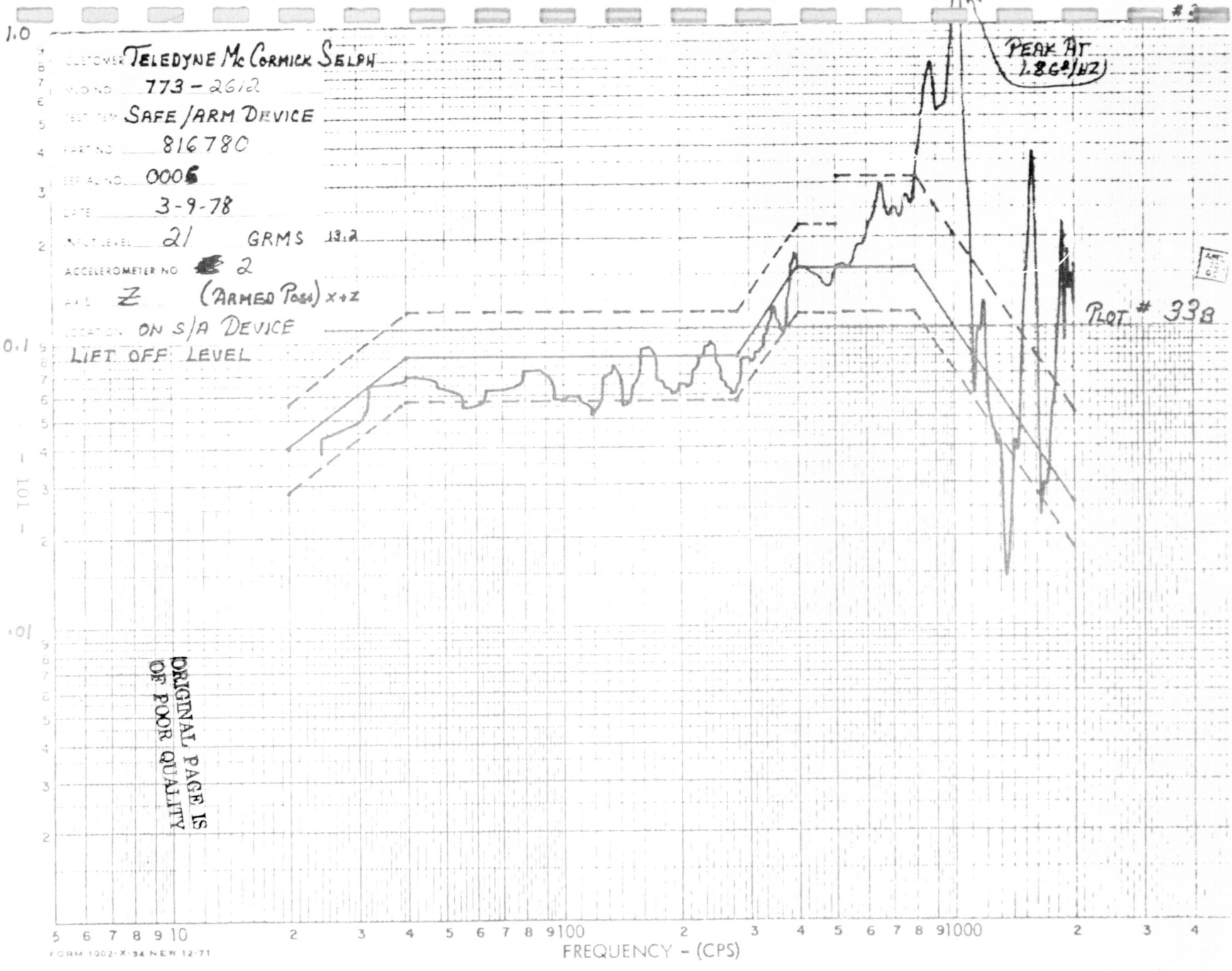
LOCATION ON FIXTURE

LIFT OFF LEVEL

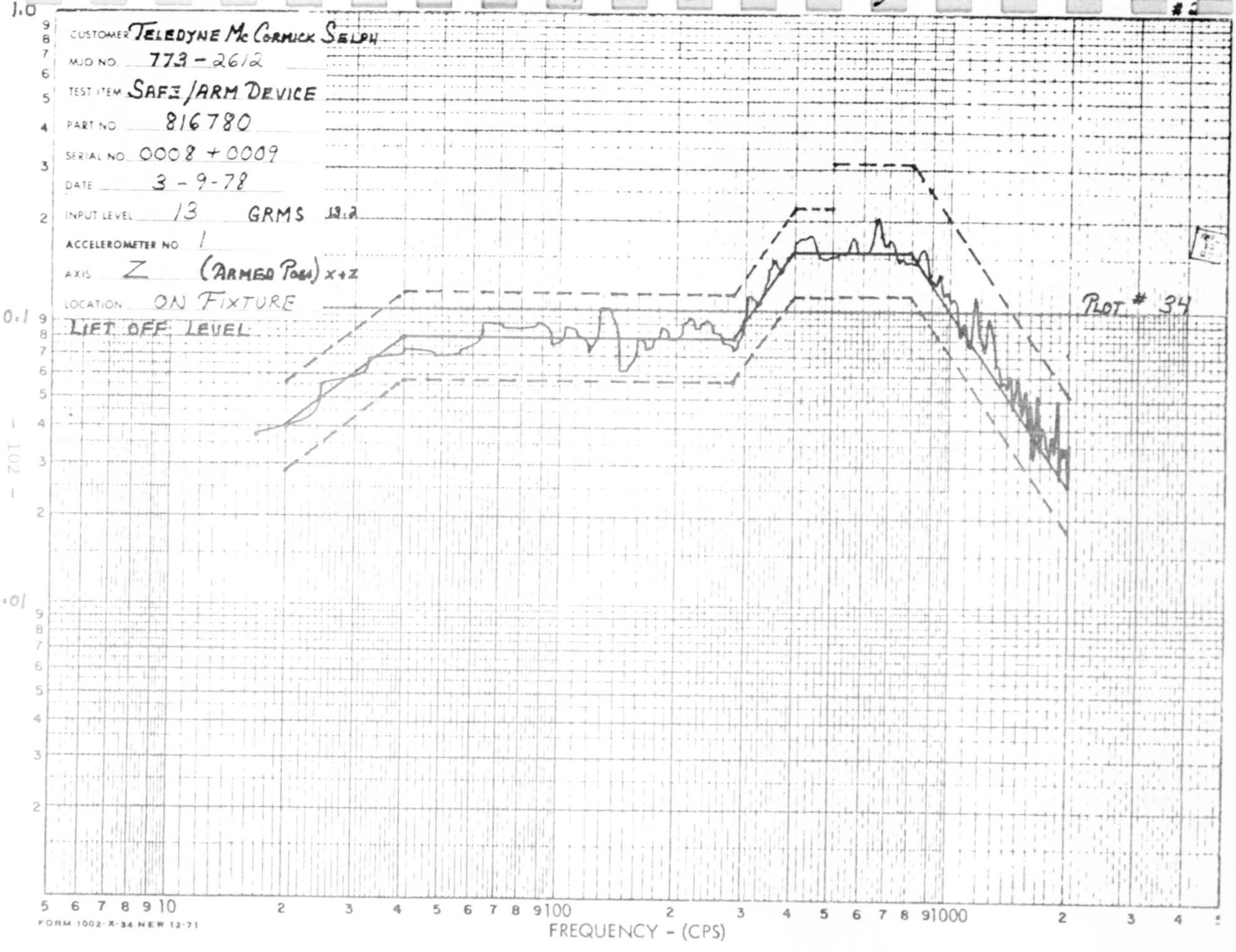
PLOT # 33A

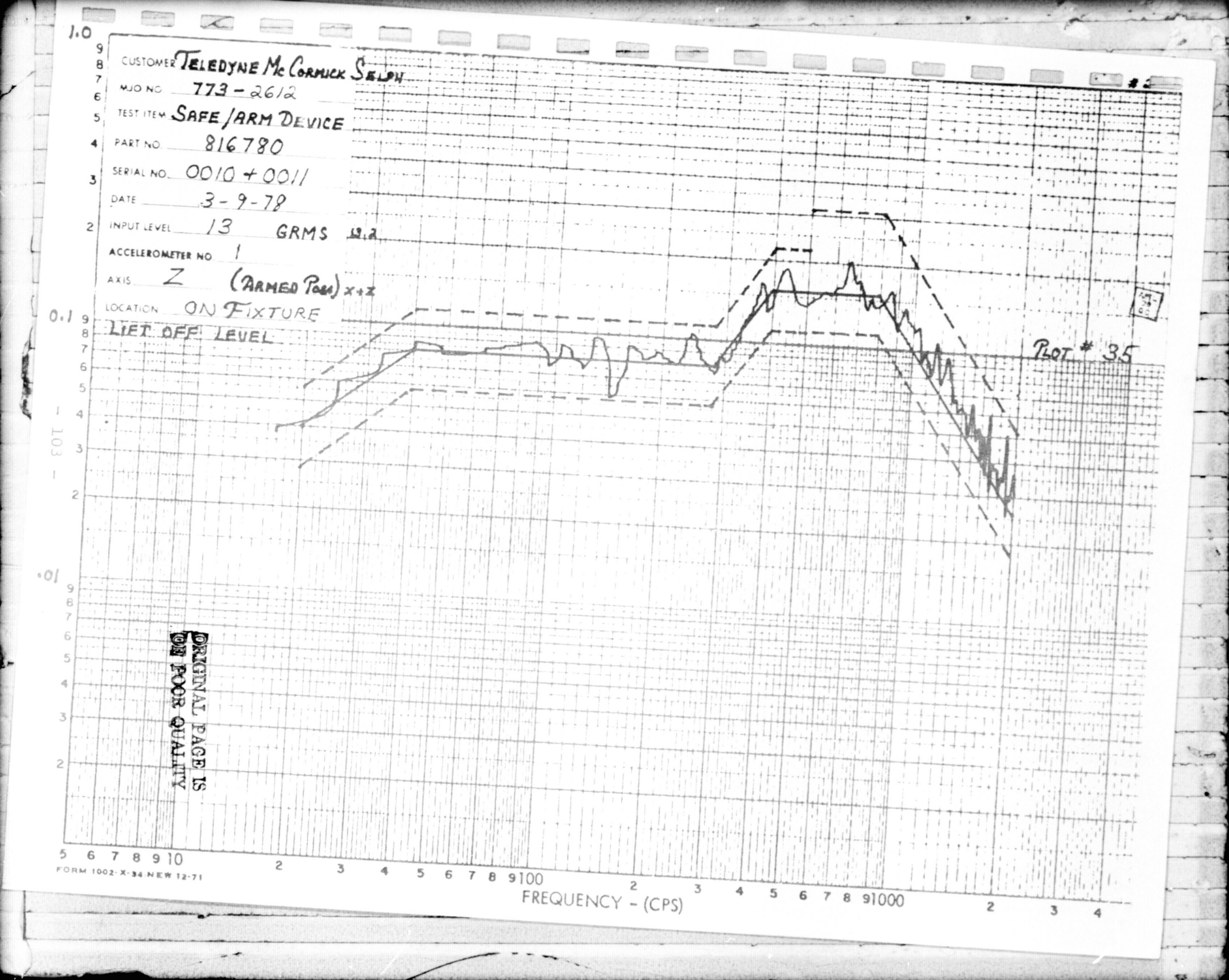


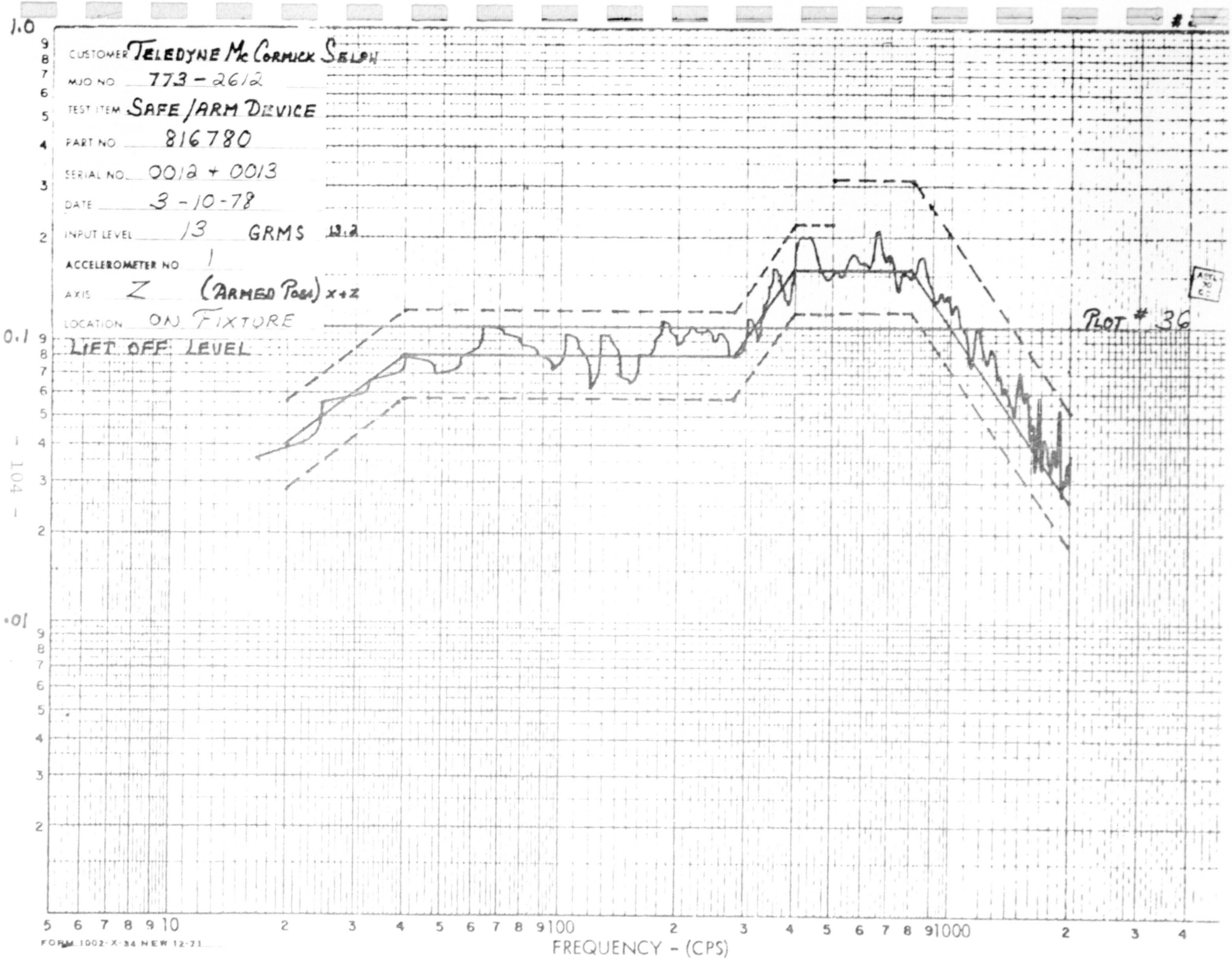
FORM 1002-X-34 NEW 12-71



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CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO. 816780
SERIAL NO. 0008 + 0009
DATE 3-9-78
INPUT LEVEL 13 GRMS 13.2
ACCELEROMETER NO 1
AXIS Z (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
PLOT # 34
#2
1.0
0.1
.01
- 102 -
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE Mc CORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0010 + 0011
DATE 3-9-78
INPUT LEVEL 13 GRMS
ACCELEROMETER NO 1
AXIS Z (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
PLOT # 35
1.0
0.1
.01
.1 .03 1
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
ORIGINAL PAGE IS OF POOR QUALITY
FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0012 + 0013
DATE 3-10-78
INPUT LEVEL 13 GRMS
ACCELEROMETER NO 1
AXIS Z (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
PLOT # 36
1.0
0.1
.01
- 104 -
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0014 + 0016

DATE 3-10-78

INPUT LEVEL 13 GRMS 12.2

ACCELEROMETER NO 1

AXIS Z (ARMED POS) X+Z

LOCATION ON FIXTURE

LIFT OFF LEVEL

PLOT # 37

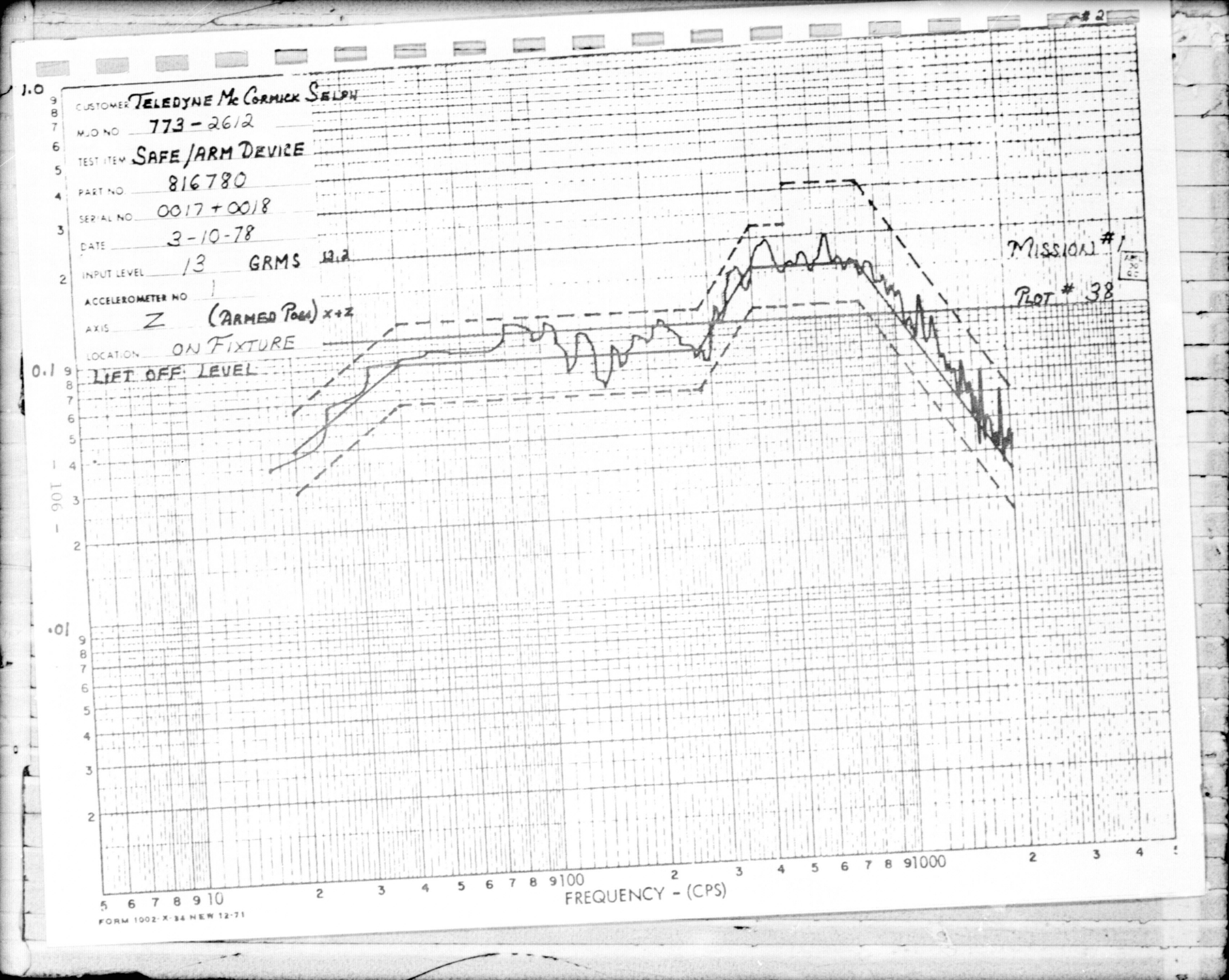
1.0 9 8 7 6 5 4 3 2 0.1 9 8 7 6 5 4 3 2 .01 9 8 7 6 5 4 3 2

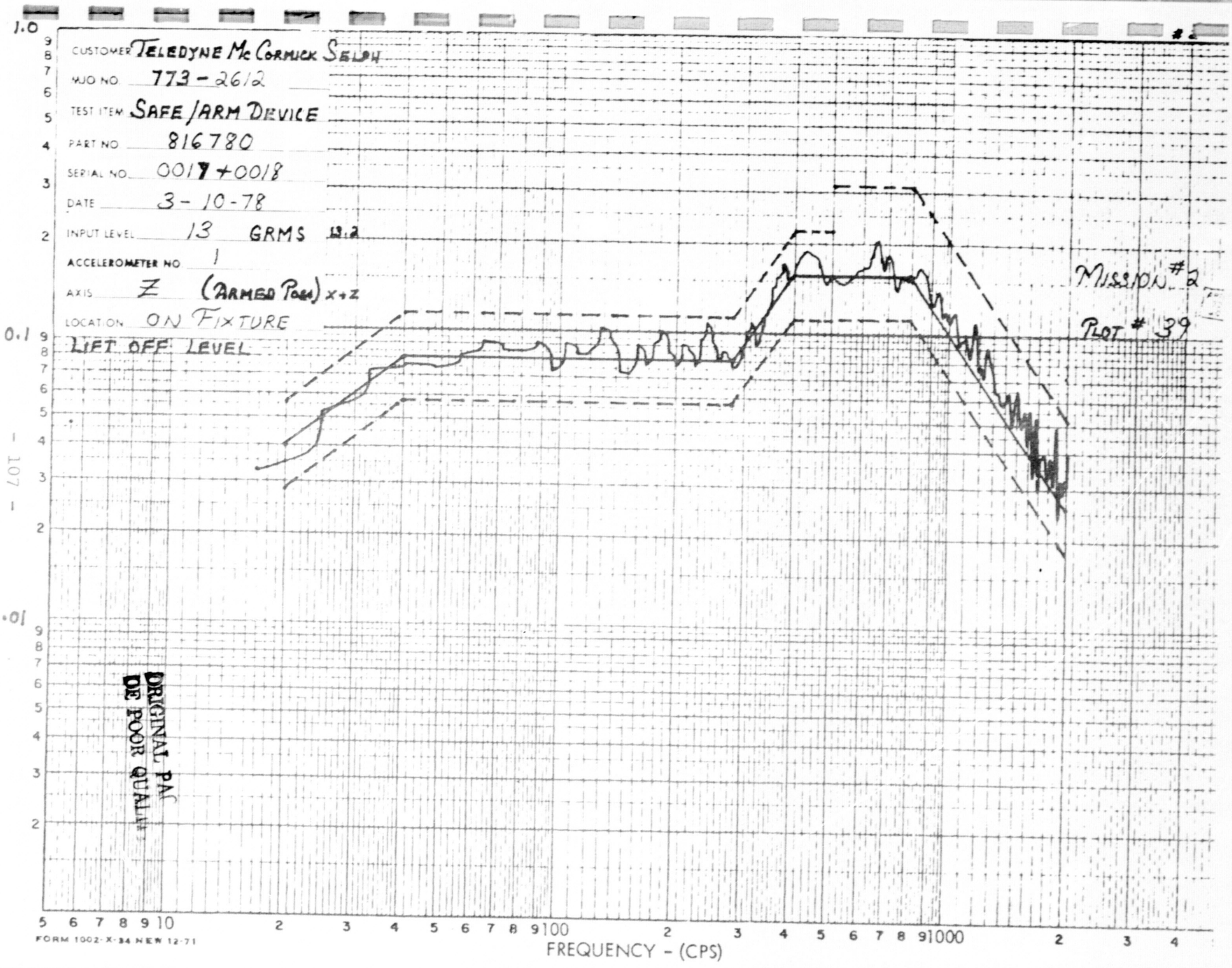
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

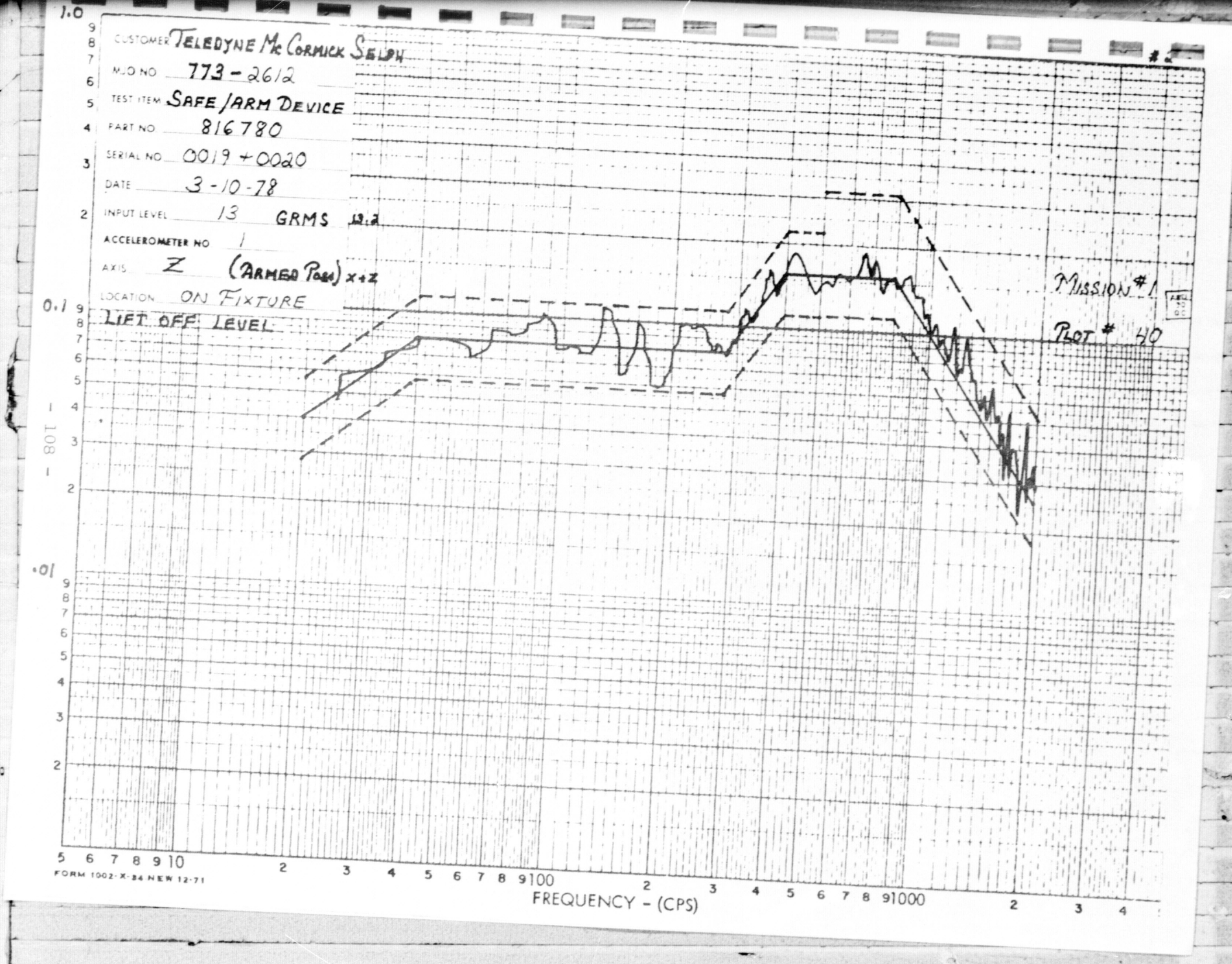
FORM 1002-X-34 NEW 12-71

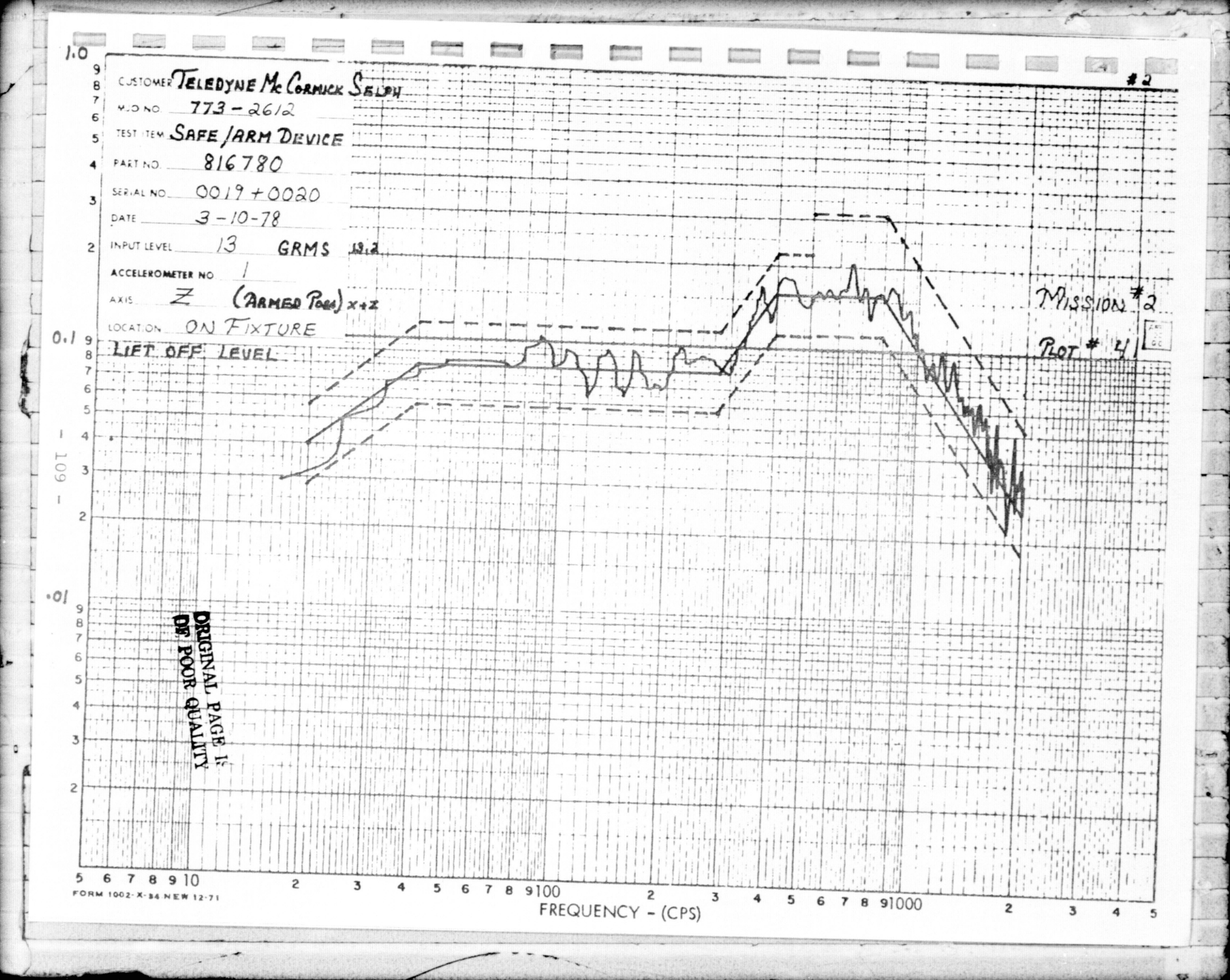
ORIGINAL PAGE IS OF POOR QUALITY


CUSTOMER TELEDYNE Mc CORMICK SELPH
M.O NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0017 + 0018
DATE 3-10-78
INPUT LEVEL 13 GRMS 13.2
ACCELEROMETER NO 1
AXIS Z (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
MISSION #1
PLOT # 38
2
1.0
0.1
.01
106
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

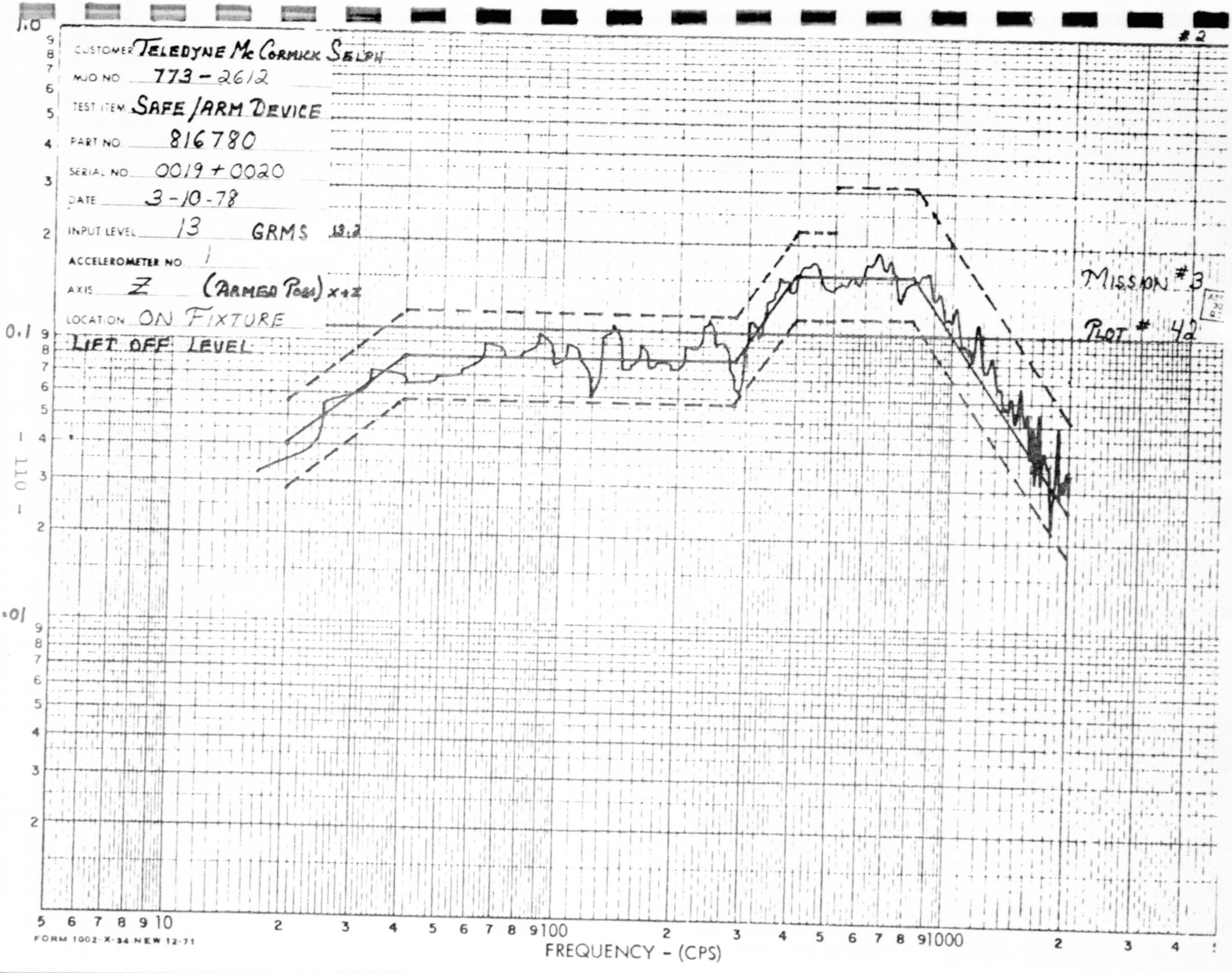


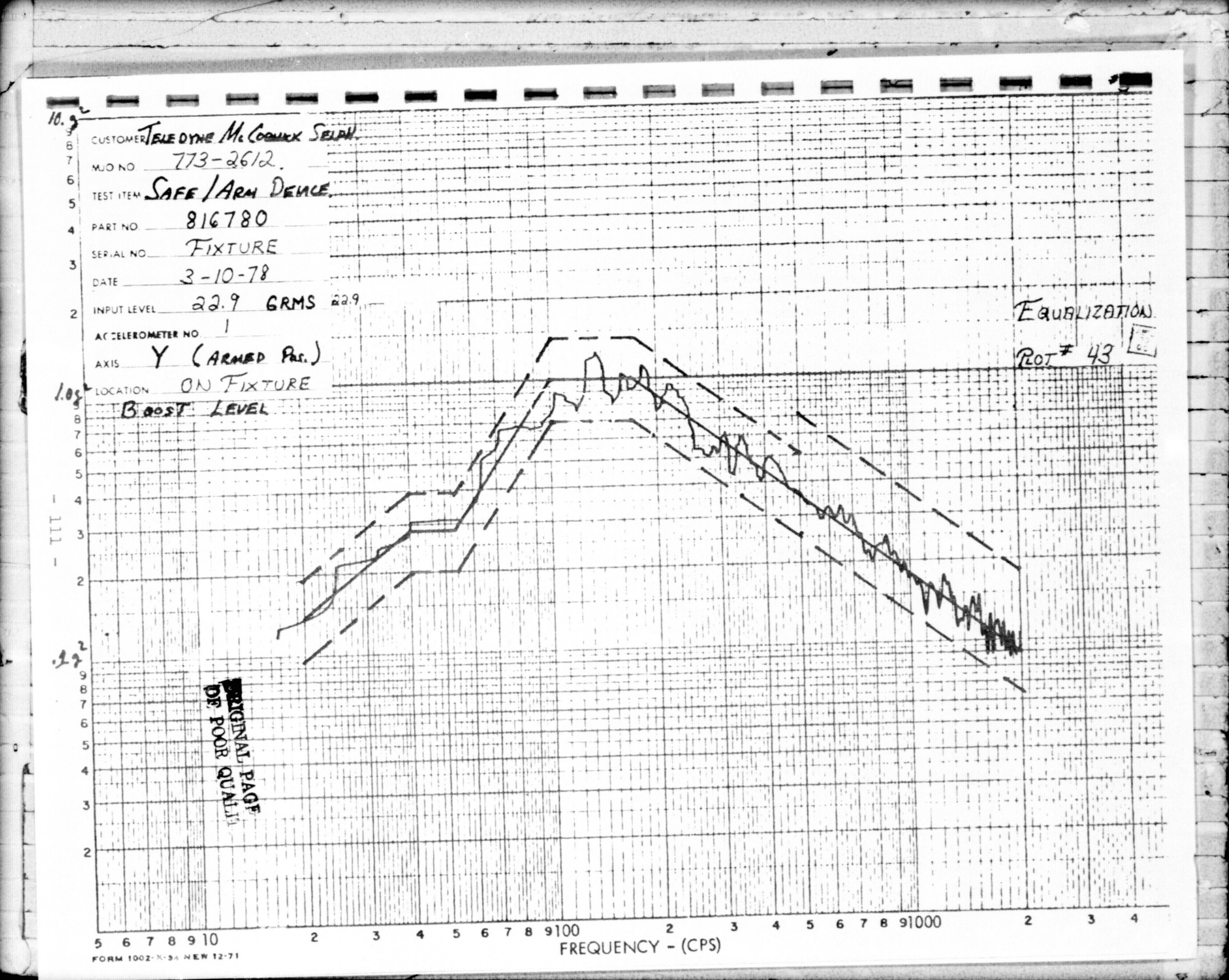
ORIGINAL PAGE IS
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CUSTOMER TELEDYNE McCORMICK SELPH
M.O NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0019 + 0020
DATE 3-10-78
INPUT LEVEL 13 GRMS 12.2
ACCELEROMETER NO 1
AXIS Z (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
MISSION #1
PLOT # 40
1.0
0.1
.01
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71



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#2
CUSTOMER TELEDYNE Mc CORMICK SELPH
MUO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0019+0020
DATE 3-10-78
INPUT LEVEL 13 GRMS 13.2
ACCELEROMETER NO 1
AXIS Z (ARMED POS) X+Z
LOCATION ON FIXTURE
LIFT OFF LEVEL
MISSION #3
PLOT # 42
1.0
0.1
.01
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71



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CUSTOMER TELEDYNE McCORMICK SELPH

M.O. NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0005

DATE 3-10-78

INPUT LEVEL 22.5 GRMS 22.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

PLOT # 47A

10.0 g²

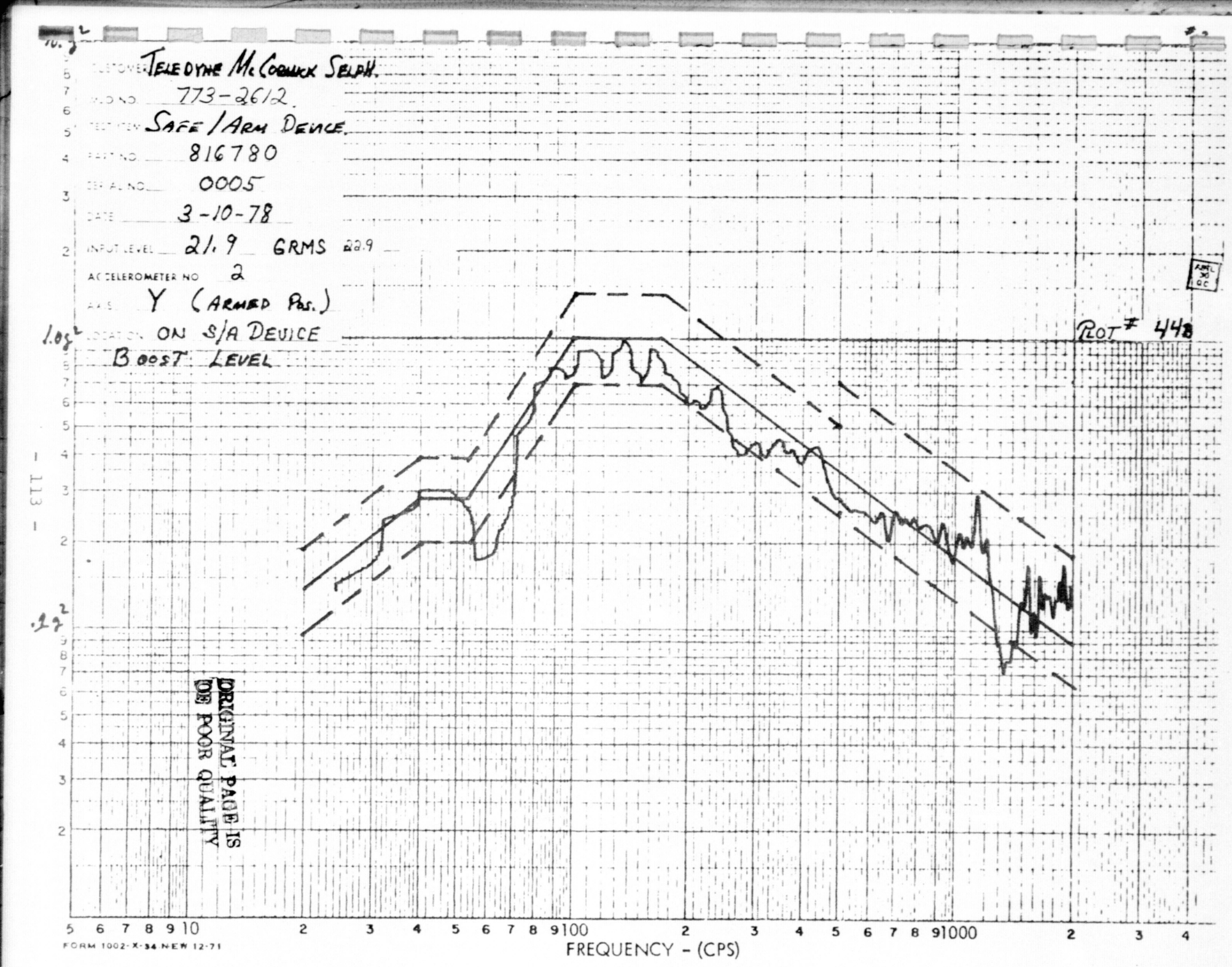
1.0 g²

.1 g²

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71



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FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH.

MJO NO 773-2612.

TEST ITEM SAFE/ARM DEVICE.

PART NO 816780

SERIAL NO 0006

DATE 3-10-78

INPUT LEVEL 22.5 GRMS

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

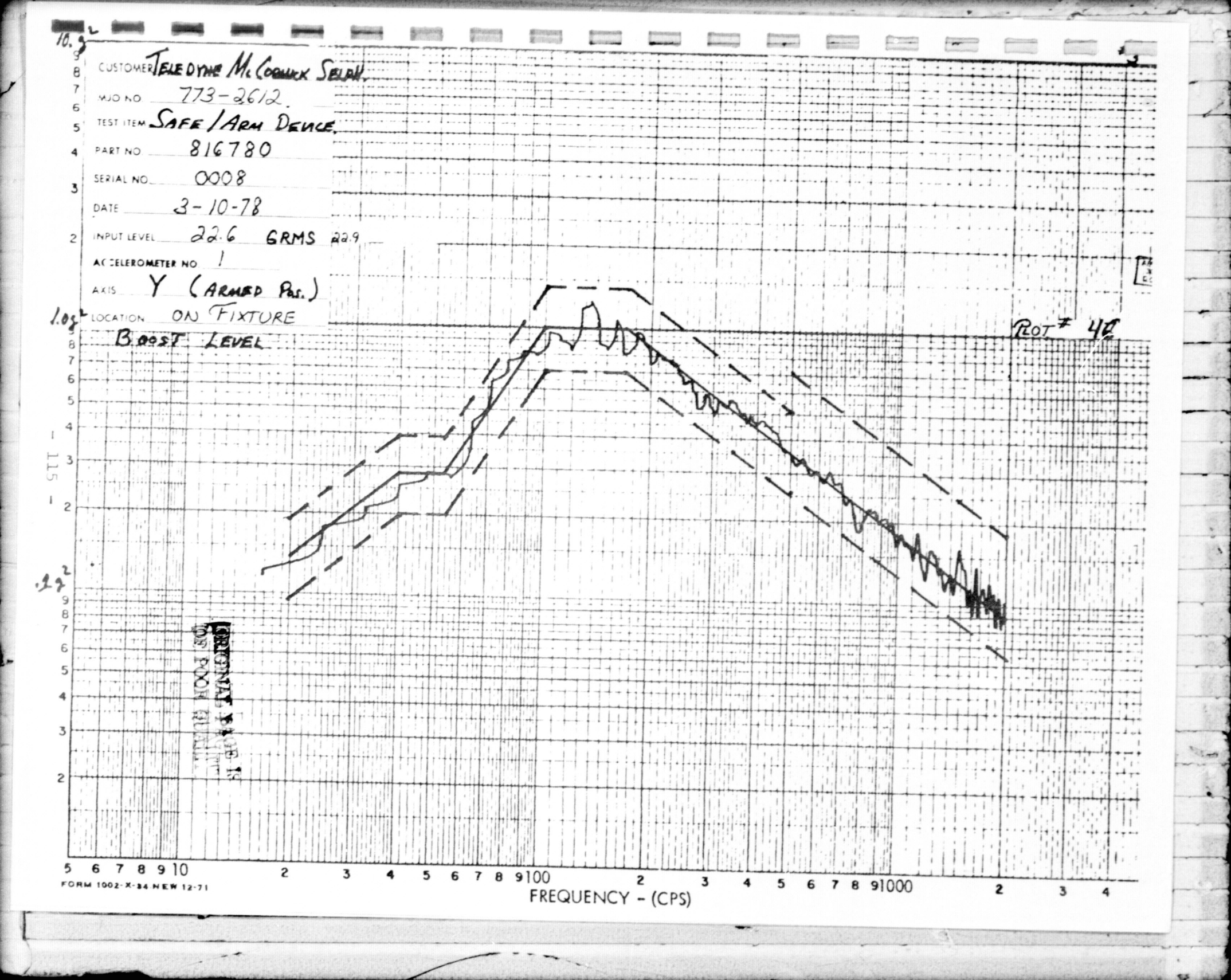
LOCATION ON FIXTURE

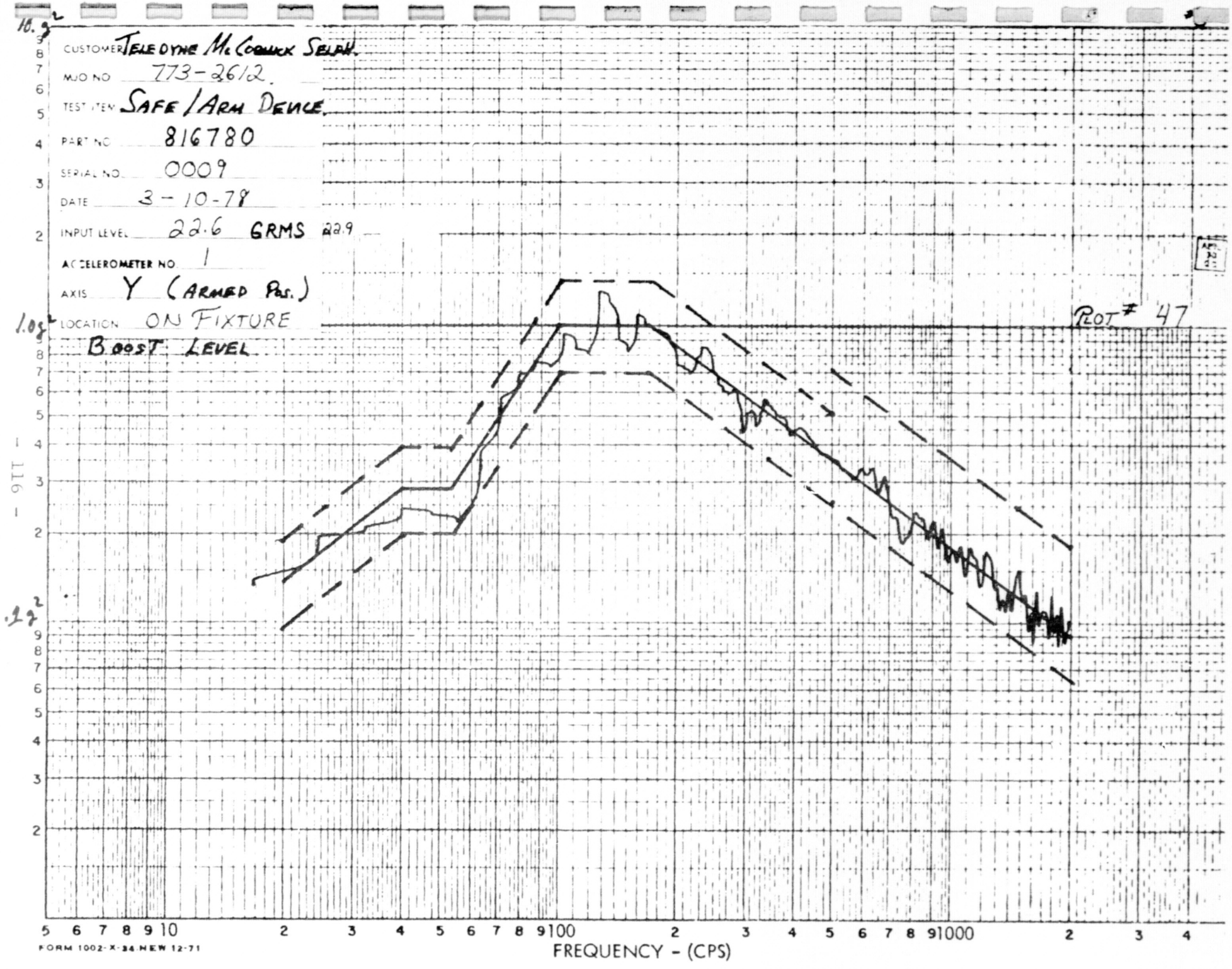
BOOST LEVEL

PLOT # 45

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0008
DATE 3-10-78
INPUT LEVEL 22.6 GRMS 22.9
ACCELEROMETER NO 1
AXIS Y (ARMED POS.)
LOCATION ON FIXTURE
BOOST LEVEL
ROT # 46
10.0 g²
1.0 g²
.1 g²
.115
ORIGINAL PAGE IS OF POOR QUALITY
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE / ARM DEVICE
PART NO 816780
SERIAL NO 0009
DATE 3-10-78
INPUT LEVEL 22.6 GRMS 22.9
ACCELEROMETER NO 1
AXIS Y (ARMED POS.)
LOCATION ON FIXTURE
BOOST LEVEL
PLOT # 47
10.0 g²
1.0 g²
.1 g²
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH.

MJO NO. 773-2612.

TEST ITEM SAFE/ARM DEVICE.

PART NO 816780

SERIAL NO. 0010

DATE 3-10-78

INPUT LEVEL 22.6 GRMS 22.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

PLOT # 48



FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

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CUSTOMER TELEDYNE McCORMICK SELPH.

MJO NO 773-2612.

TEST ITEM SAFE / ARM DEVICE.

PART NO 816780

SERIAL NO 0011

DATE 3-10-78

INPUT LEVEL 22.6 GRMS 22.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

ROT # 49

10.0 g²/Hz

1.0 g²/Hz

.1 g²/Hz

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612.

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0012

DATE 3-10-78

INPUT LEVEL 22.6 GRMS @ 0.9

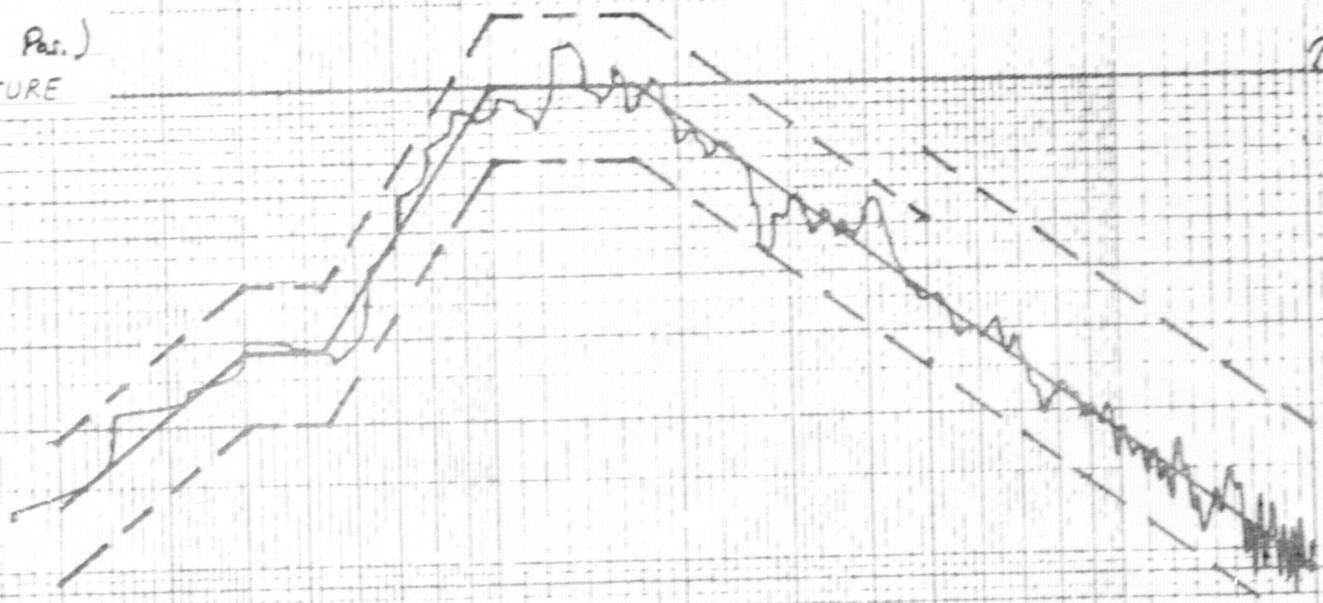
ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

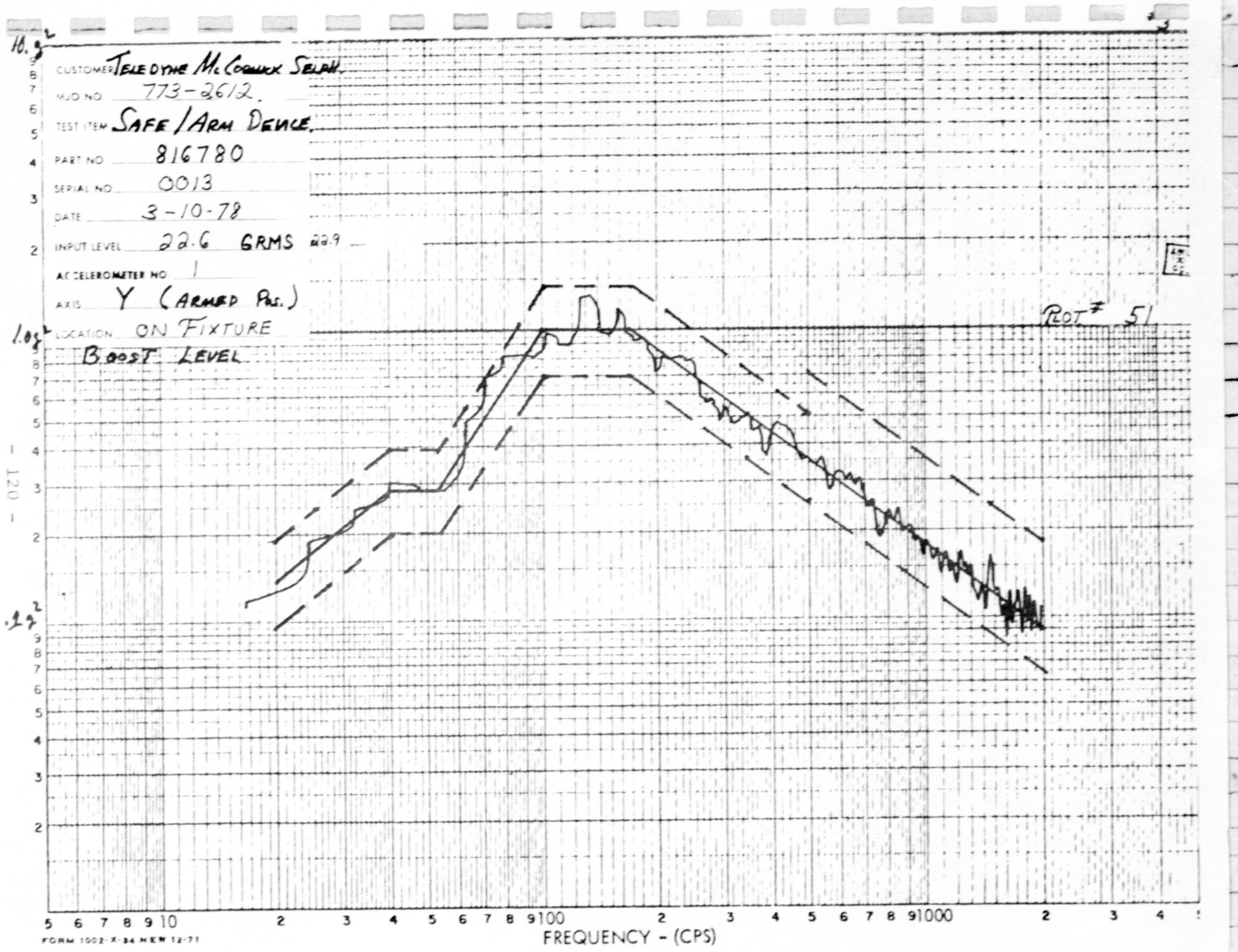
PLOT # 50

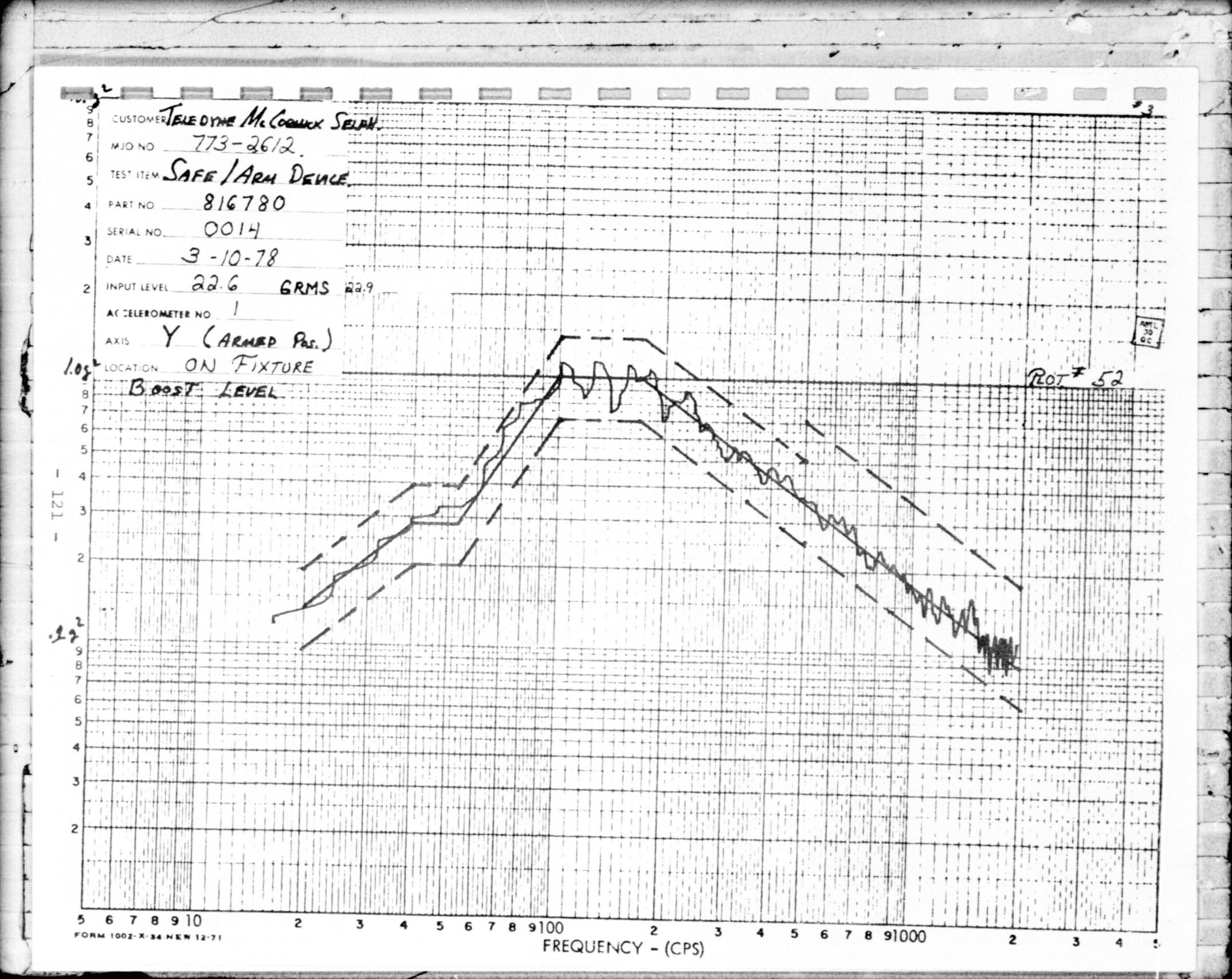


G²/HZ

FREQUENCY - (CPS)

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OF POOR QUALITY


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0013
DATE 3-10-78
INPUT LEVEL 22.6 GRMS 22.9
ACCELEROMETER NO 1
AXIS Y (ARMED POS.)
LOCATION ON FIXTURE
BOOST LEVEL
PLOT # 51
10.0 g²
1.0 g²
.1 g²
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 REV 12-71


CUSTOMER TELEDYNE McCORMICK SELPH.
MJO NO 773-2612.
TEST ITEM SAFE/ARM DEVICE.
PART NO 816780
SERIAL NO 0014
DATE 3-10-78
INPUT LEVEL 22.6 GRMS 22.9
ACCELEROMETER NO 1
AXIS Y (ARMED POS.)
LOCATION ON FIXTURE
BOOST LEVEL
PLOT # 52
1.0g²
.1g²
- 121 -
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0016

DATE 3-10-78

INPUT LEVEL 22.6 GRMS 22.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

PLOT # 53

$1.0\ g^2$

$.1\ g^2$

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4 5

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

ORIGINAL PAGE IS
OF POOR QUALITY

CUSTOMER TELEDYNE McCORMICK SELPH

M.O. NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0017

DATE 3-10-78

INPUT LEVEL 22.6 GRMS @ 2.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

MISSION #1

ROT # 54

1.0 g²

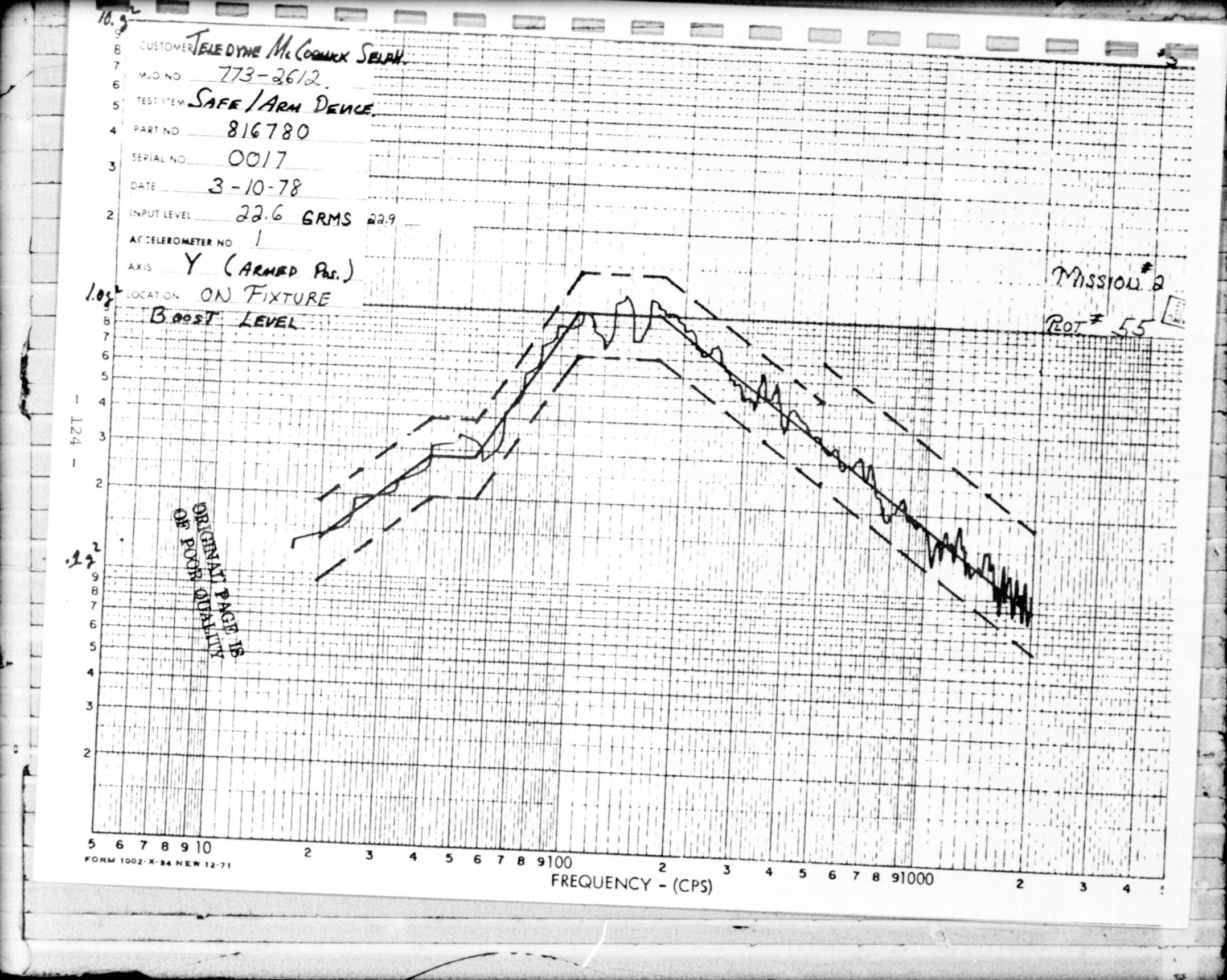
.1 g²

- 123 -

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0017
DATE 3-10-78
INPUT LEVEL 22.6 GRMS 22.9
ACCELEROMETER NO 1
AXIS Y (ARMED POS.)
LOCATION ON FIXTURE
BOOST LEVEL
MISSION # 2
PLOT # 55
10.0 g²
1.0 g²
.1 g²
ORIGINAL PAGE IS OF POOR QUALITY
FREQUENCY - (CPS)
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

M.O. NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0018

DATE 3-10-78

INPUT LEVEL 22.6 GRMS 22.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

#3

MISSION #1

PLOT # 56

1.0 g²/cps

.1 g²/cps

- 125 -

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH.

M.O. NO 773-2612.

TEST ITEM SAFE/ARM DEVICE.

PART NO. 816780

SERIAL NO. 0018

DATE 3-10-78

INPUT LEVEL 22.6 GRMS 22.9

ACCELEROMETER NO. 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

MISSION #2

PLOT # 57

ACC QC

1.0 g²

.1 g²

FREQUENCY - (CPS)

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4 5

FORM 1002-X-34 NEW 12-71

ORIGINAL PAGE IS OF POOR QUALITY

CUSTOMER TELEDYNE McCORMICK SELPH.

M.O. NO 773-2612.

TEST ITEM SAFE/ARM DEVICE.

PART NO 816780

SERIAL NO 0019

DATE 3-10-78

INPUT LEVEL 22.9 GRMS 22.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

MISSION #1

ROT # 58

1.0 g²

.1 g²

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH.

MJO NO 773-2612.

TEST ITEM SAFE/ARM DEVICE.

PART NO 816780

SERIAL NO 0019

DATE 3-10-78

INPUT LEVEL 22.6 GRMS 22.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

MISSION #2

PLOT # 59

1.0 g²/Hz

.1 g²/Hz

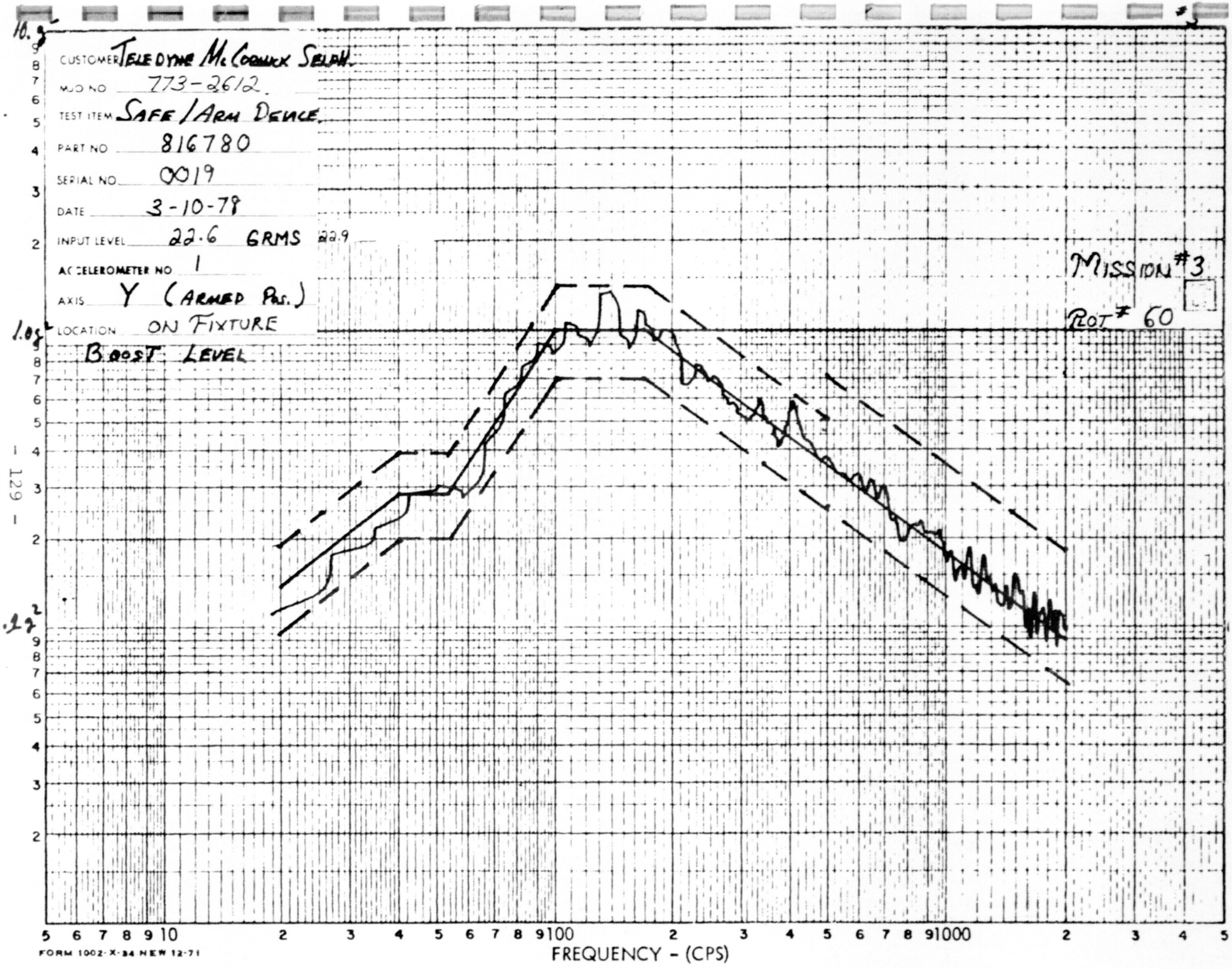
128

FREQUENCY - (CPS)

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4 5

FORM 1002-X-84 NEW 12-71

ORIGINAL PAGE IS
OF POOR QUALITY


CUSTOMER TELEDYNE McCORMICK SELPH.
MOD NO 773-2612.
TEST ITEM SAFE/ARM DEVICE.
PART NO 816780
SERIAL NO 0019
DATE 3-10-78
INPUT LEVEL 22.6 GRMS
22.9
ACCELEROMETER NO 1
AXIS Y (ARMED POS.)
LOCATION ON FIXTURE
BOOST LEVEL
MISSION #3
PLOT # 60
10.0 g²
1.0 g²
.1 g²
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH.

M.O. NO 773-2612.

TEST ITEM SAFE/ARM DEVICE.

PART NO 816780

SERIAL NO 0020

DATE 3-10-78

INPUT LEVEL 22.6 GRMS 22.9

ACCELEROMETER NO 1

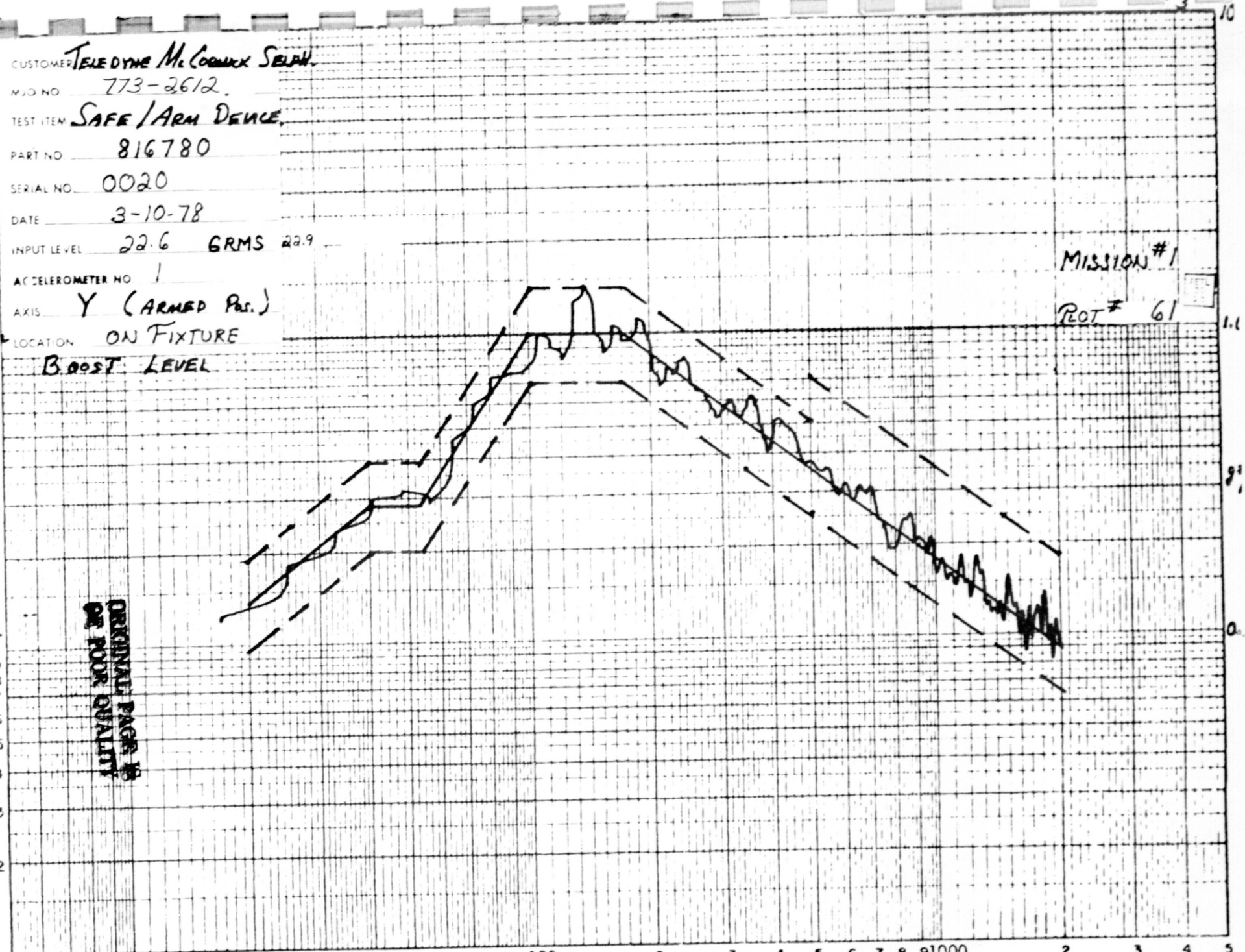
AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

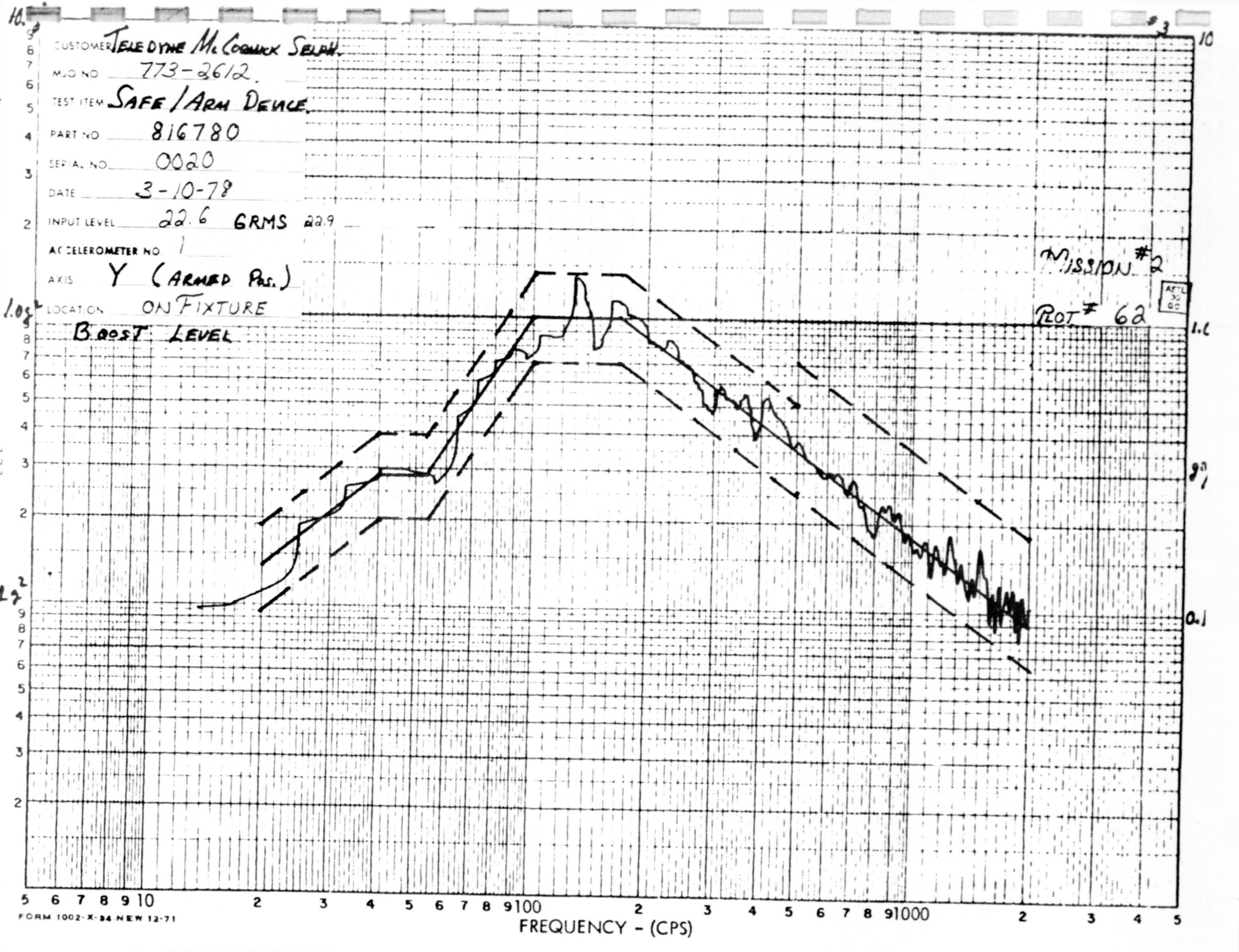
MISSION #1

PLOT # 61



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FORM 1002-X-24 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH.
M.O. NO 773-2612.
TEST ITEM SAFE/ARM DEVICE.
PART NO 816780
SERIAL NO 0020
DATE 3-10-78
INPUT LEVEL 22.6 GRMS 22.9
ACCELEROMETER NO 1
AXIS Y (ARMED POS.)
LOCATION ON FIXTURE
BOOST LEVEL
MISSION #2
PLOT # 62
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MOD NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0020

DATE 3-10-78

INPUT LEVEL 22.9 GRMS 22.9

ACCELEROMETER NO 1

AXIS Y (ARMED POS.)

LOCATION ON FIXTURE

BOOST LEVEL

MISSION #3

PLOT # 63

1.0 g²

.1 g²

132

FREQUENCY - (CPS)

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4 5

FORM 1002-X-34 NEW 12-71

ORIGINAL PAGE IS
OF POOR QUALITY

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. FIXTURE

DATE 3-10-78

INPUT LEVEL 17.4 GRMS 17.4

ACCELEROMETER NO. 1

AXIS ARM (SAFE Pos.) (X+Z)

LOCATION ON FIXTURE

BOOST LEVEL

EQUALIZATION

PLOT # 64

9 8 7 6 5 4 3 2

9 8 7 6 5 4 3 2

9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

#4

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0005 + 0006

DATE 3-10-78

INPUT LEVEL 17.4 GRMS 17.4

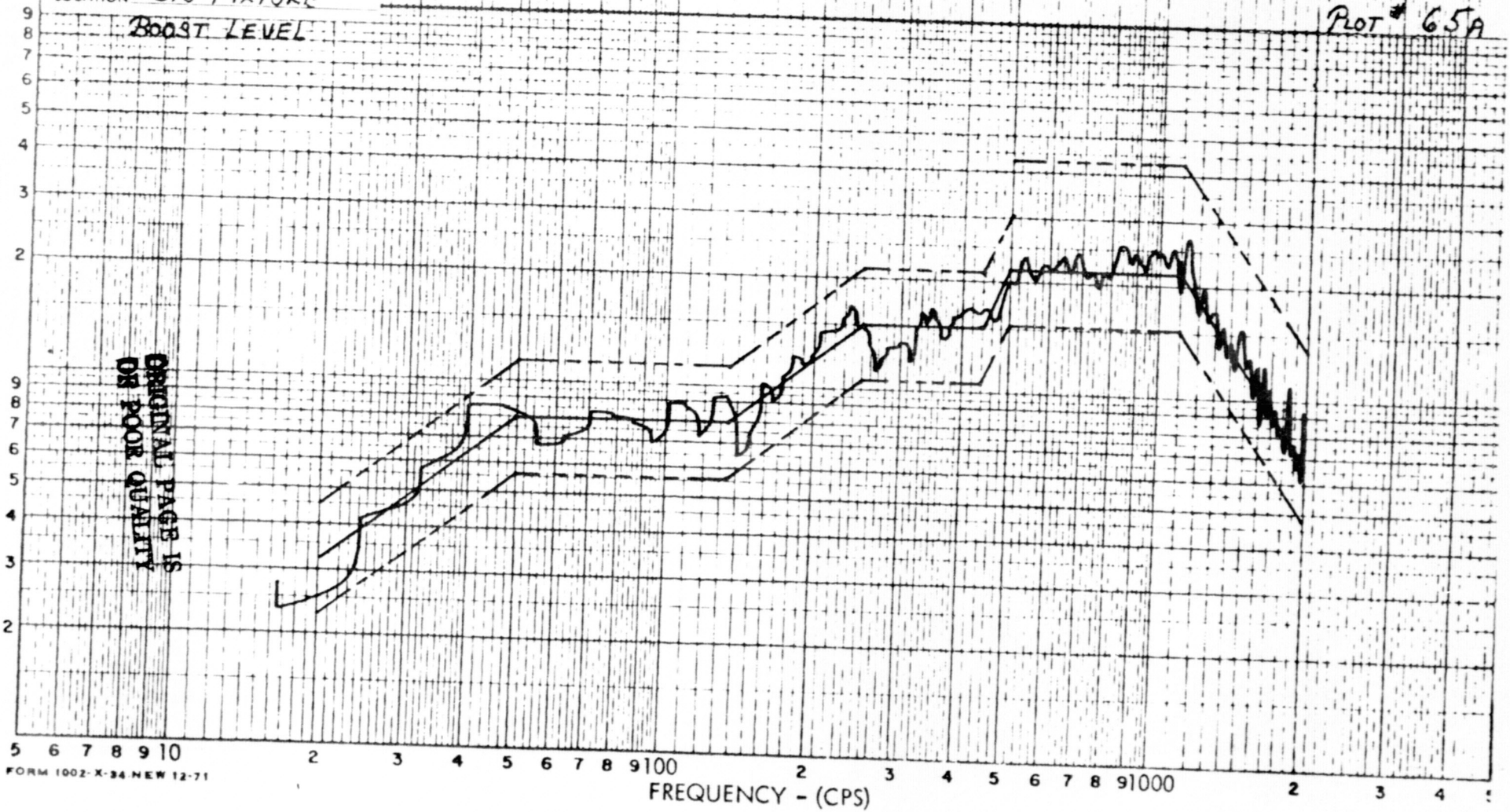
ACCELEROMETER NO 1

AXIS Z (ARM Pos) (X+Z)

LOCATION ON FIXTURE

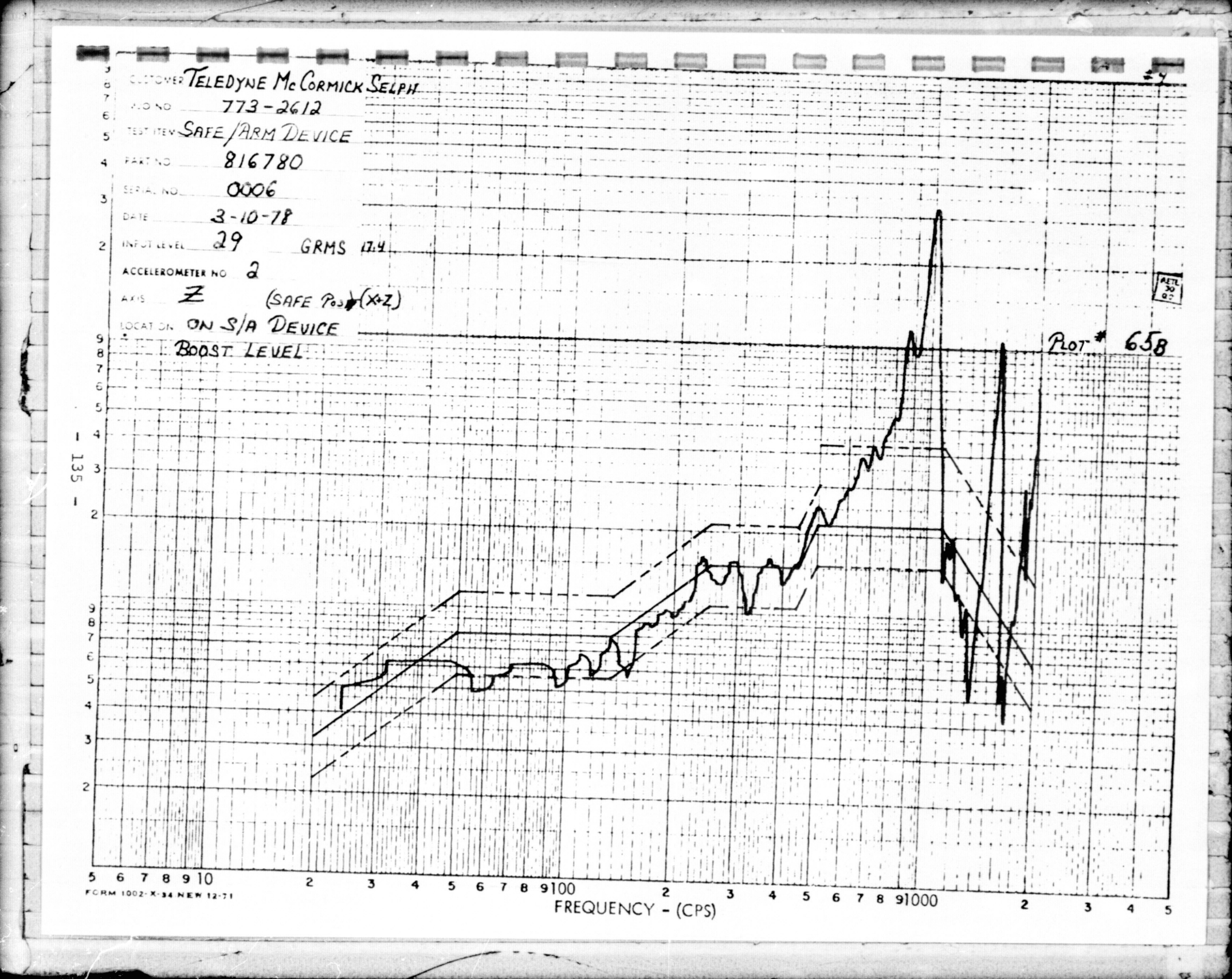
BOOST LEVEL

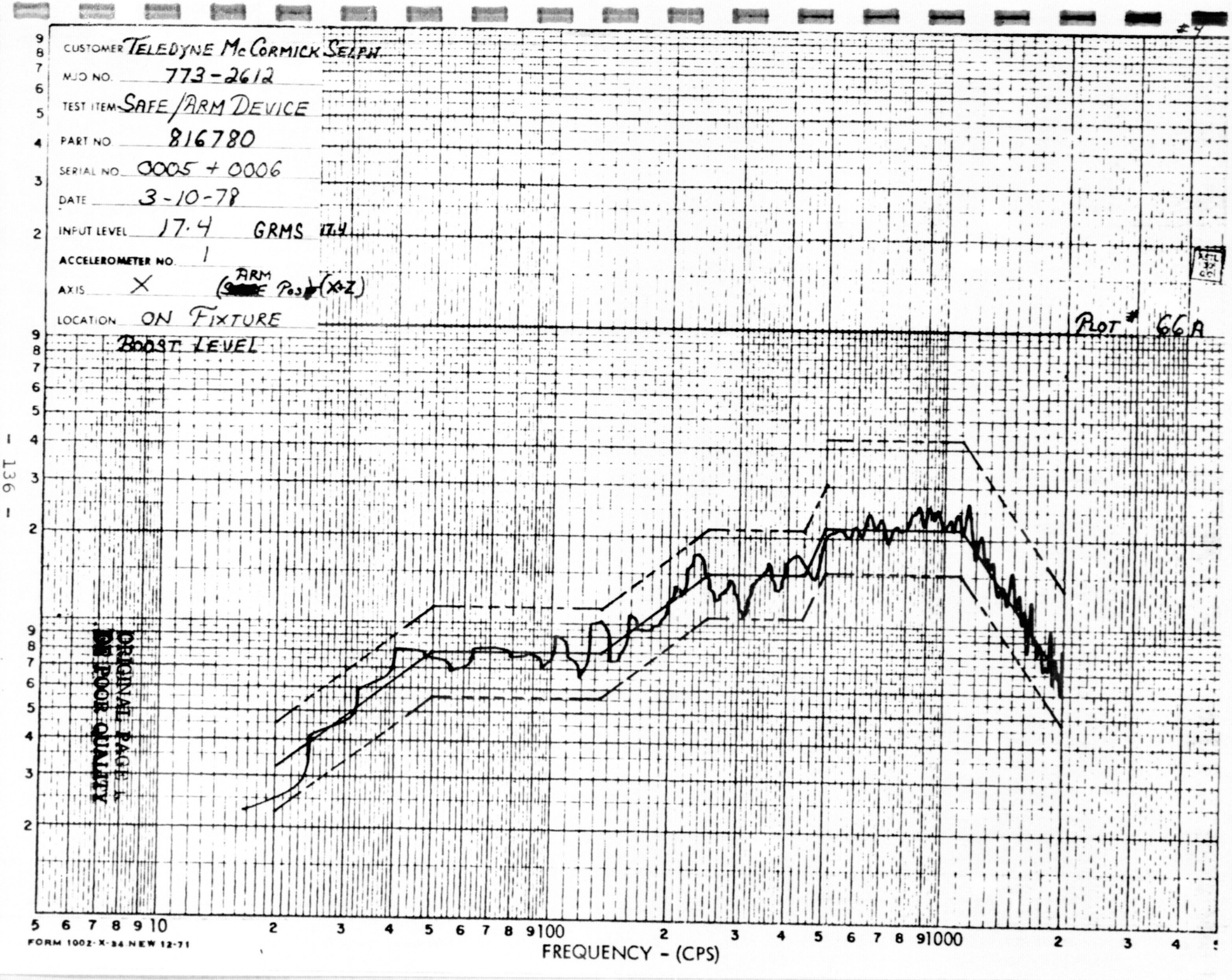
PLOT # 65A



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FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
P.O. NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0006
DATE 3-10-78
INPUT LEVEL 29 GRMS 17.4
ACCELEROMETER NO 2
AXIS Z (SAFE Pos. (X+Z)
LOCATION ON S/A DEVICE
BOOST LEVEL
PLOT # 65B
AETL 30 87
- 135 -
FORM 1002-X-34 NEW 12-71
FREQUENCY - (CPS)


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0005 + 0006
DATE 3-10-78
INPUT LEVEL 17.4 GRMS 17.4
ACCELEROMETER NO. 1
AXIS X (ARM Pos (X-Z)
LOCATION ON FIXTURE
BOOST LEVEL
PLOT # 66A
ORIGINAL PAGE IS POOR QUALITY
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

W.O NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0006

DATE 3-10-78

INPUT LEVEL 33 GRMS 17.4

ACCELEROMETER NO 2

AXIS X (SAFE Pos) (X+Z)

LOCATION ON S/A DEVICE

BOOST LEVEL

PLOT # 66B

MTL 30 6-6

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

#4

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0008 + 0009

DATE 3-10-78

INPUT LEVEL 17.4 GRMS 17.4

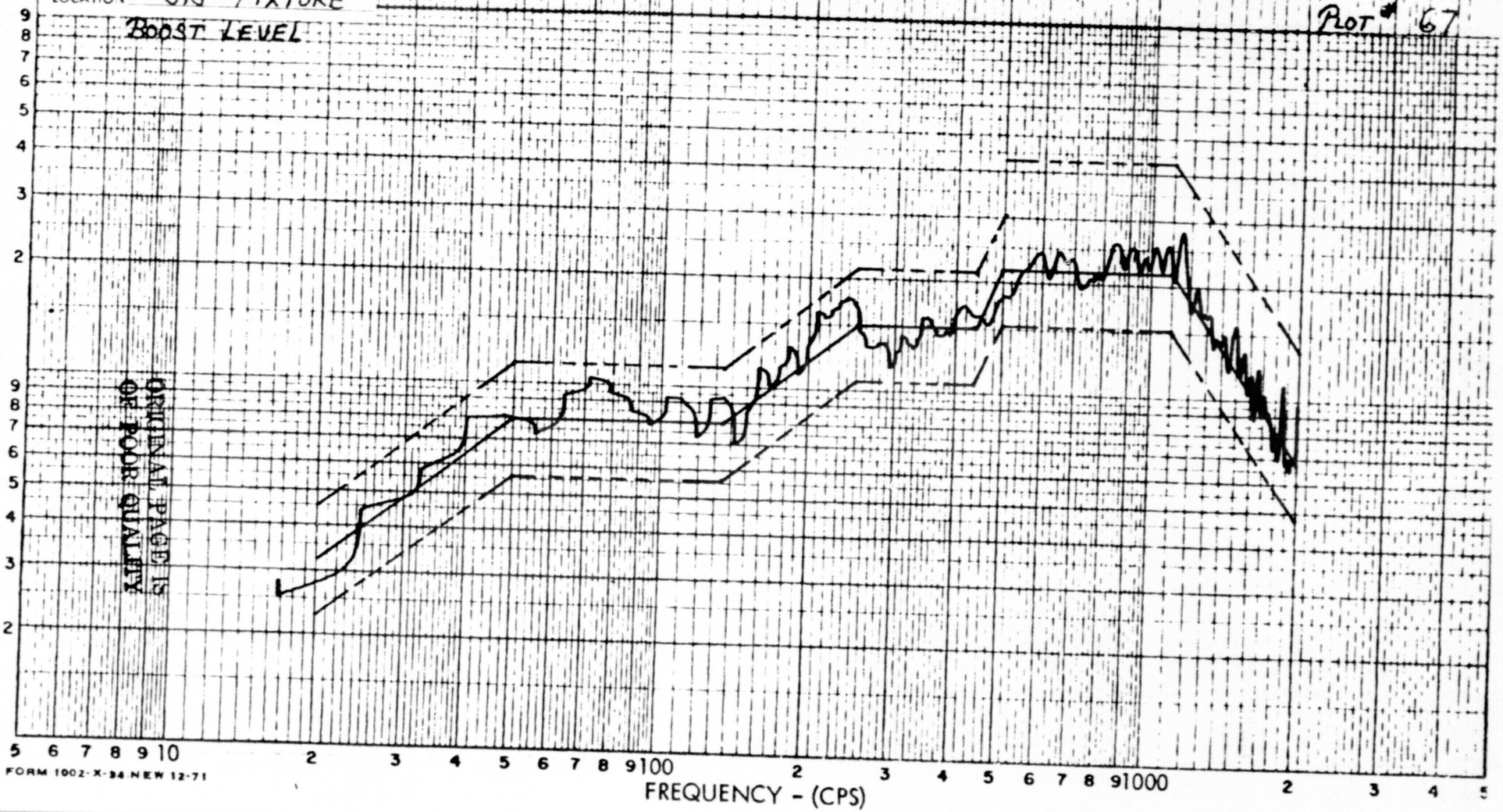
ACCELEROMETER NO 1

AXIS X (ARM Pos (X+Z)

LOCATION ON FIXTURE

BOOST LEVEL

PLOT 67



ORIGINAL PAGE IS OF POOR QUALITY

FORM 1002-X-34 NEW 12-71

#4

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0008 + 0009

DATE 3-10-78

INPUT LEVEL 17.4 GRMS 17.4

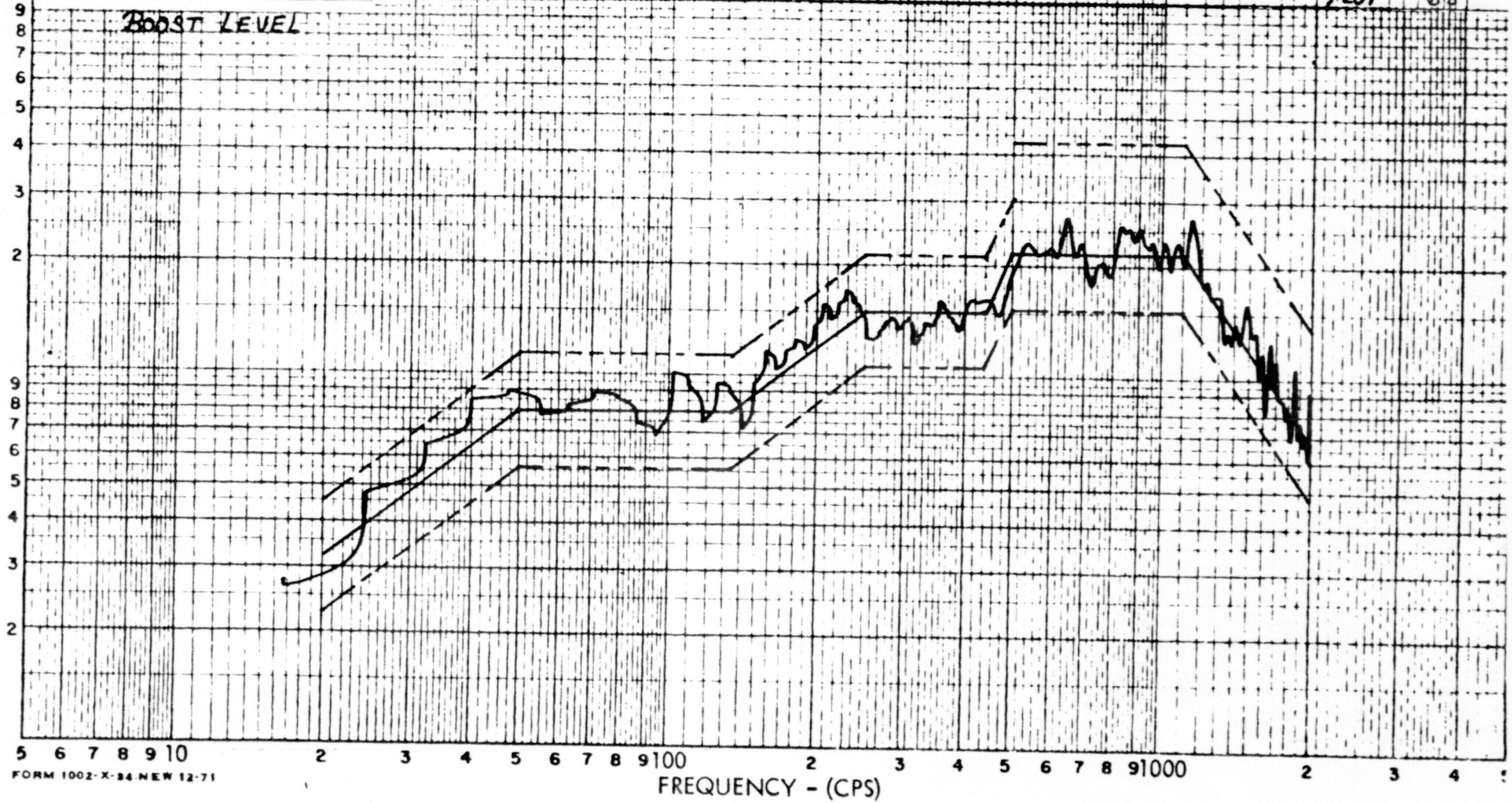
ACCELEROMETER NO. 1

AXIS Z (ARM Pos (X-Z)

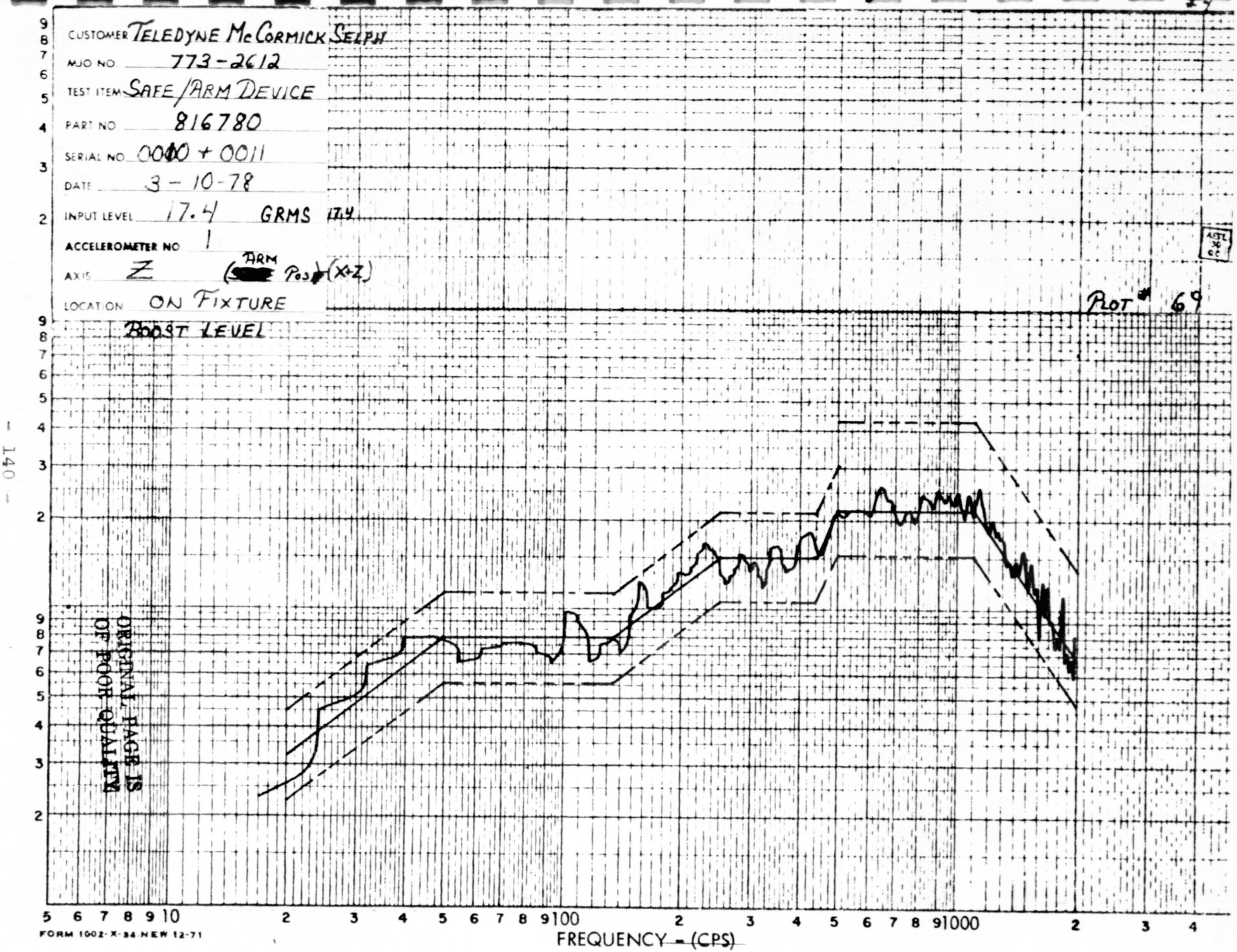
LOCATION ON FIXTURE

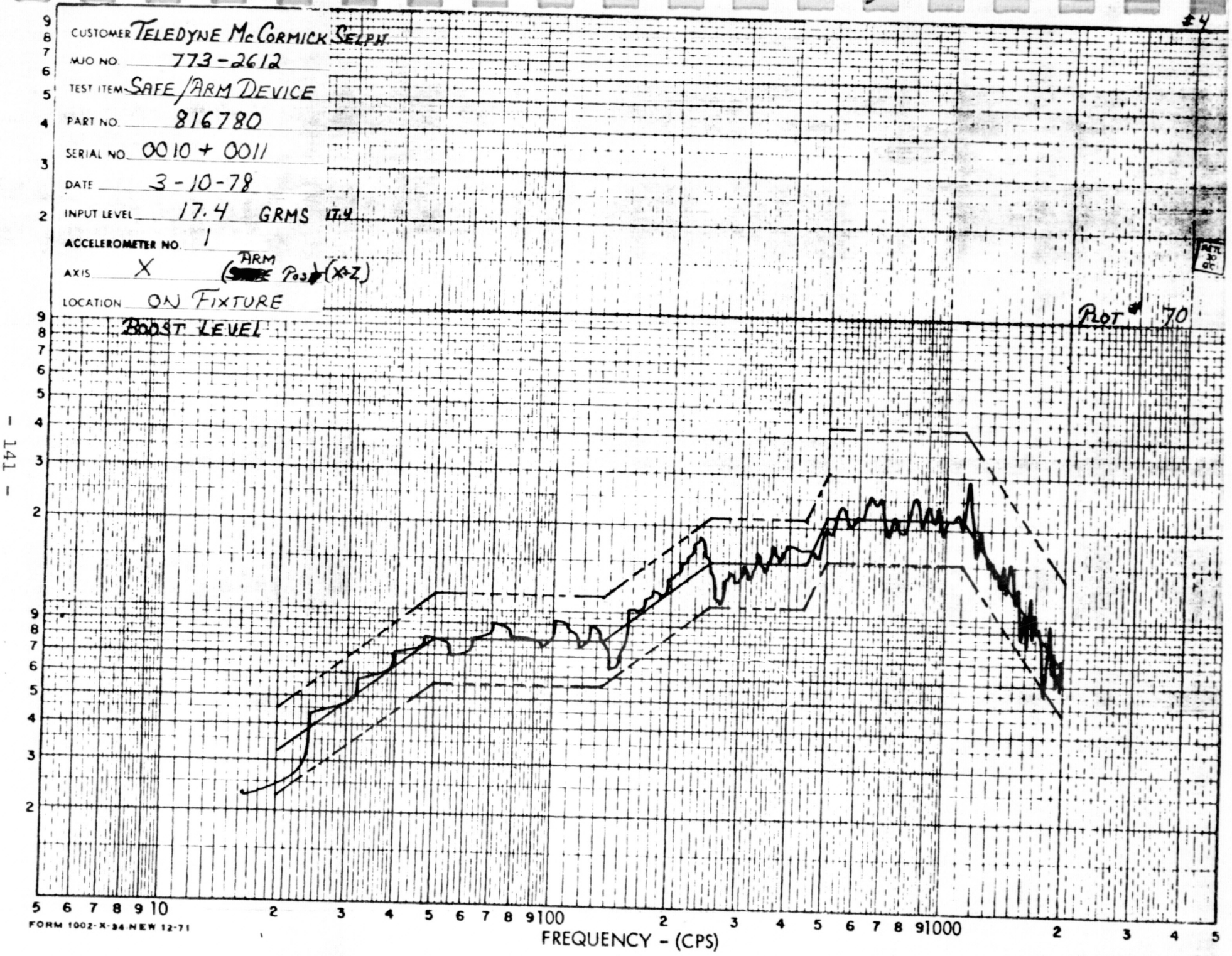
PLOT # 68

BOOST LEVEL

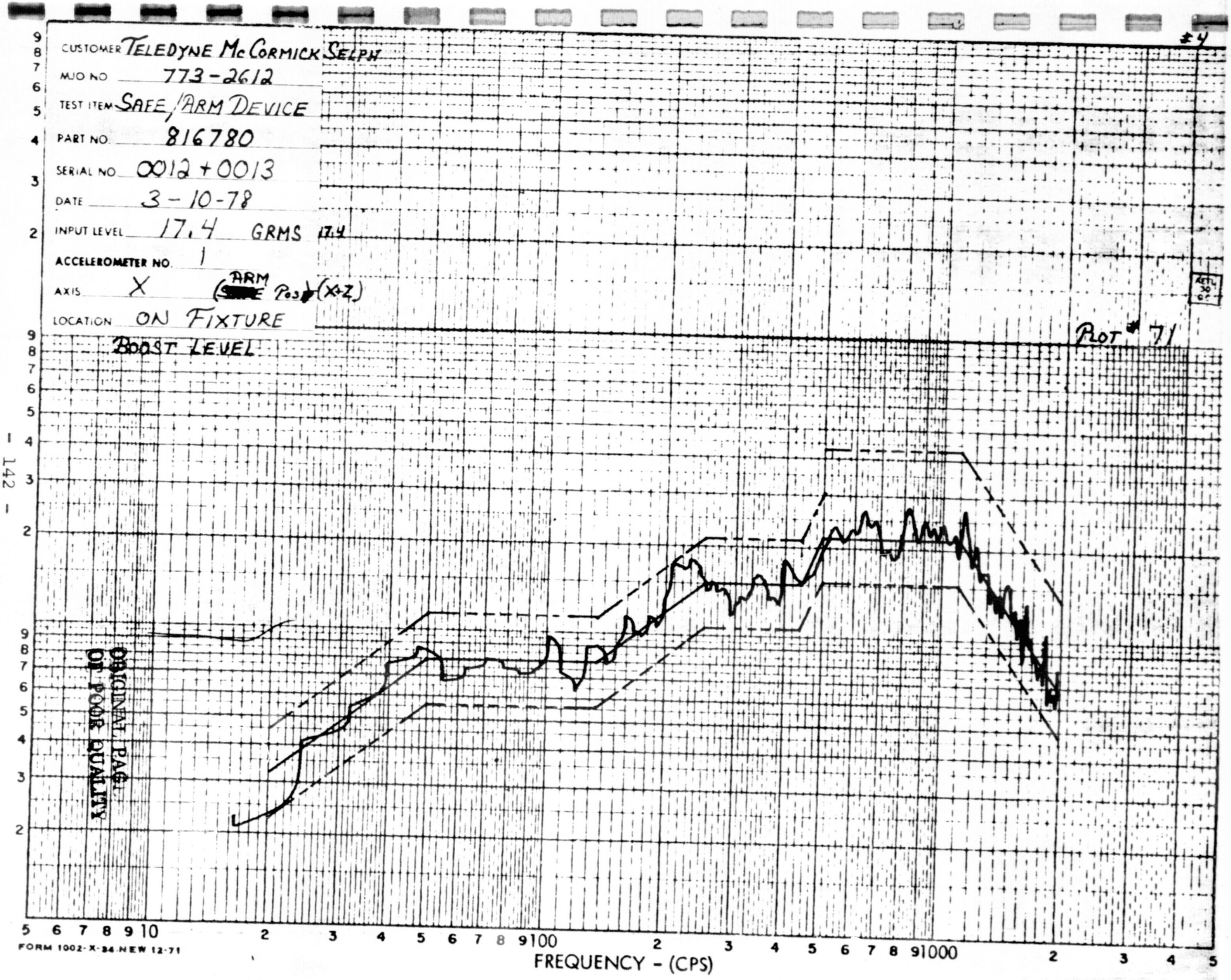


FORM 1002-X-84 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0010 + 0011
DATE 3-10-78
INPUT LEVEL 17.4 GRMS 17.4
ACCELEROMETER NO 1
AXIS Z (ARM [redacted] Pos (X+Z)
LOCATION ON FIXTURE
BOOST LEVEL
PLOT # 69
ORIGINAL PAGE IS OF POOR QUALITY
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

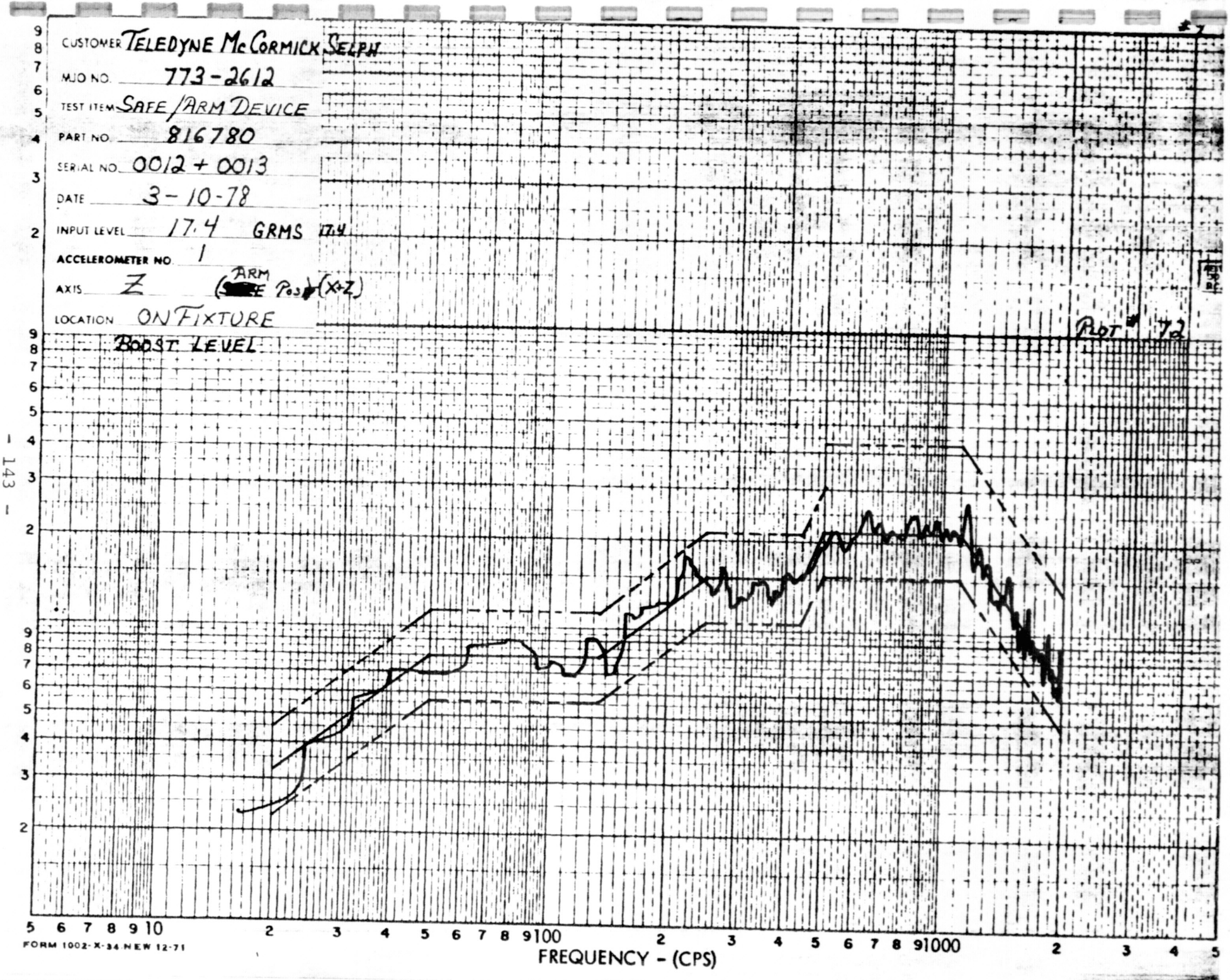


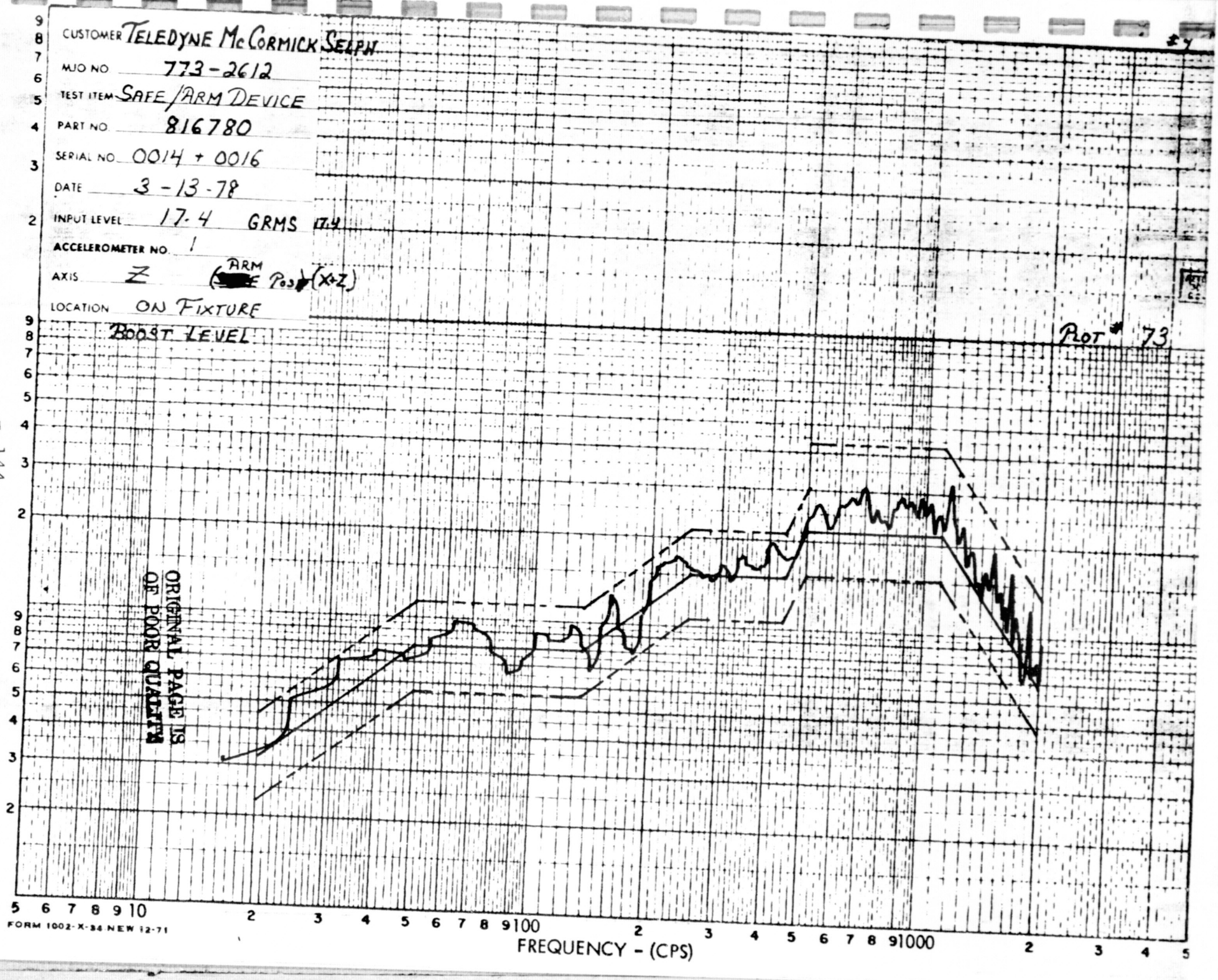
FORM 1002-X-34 NEW 12-71



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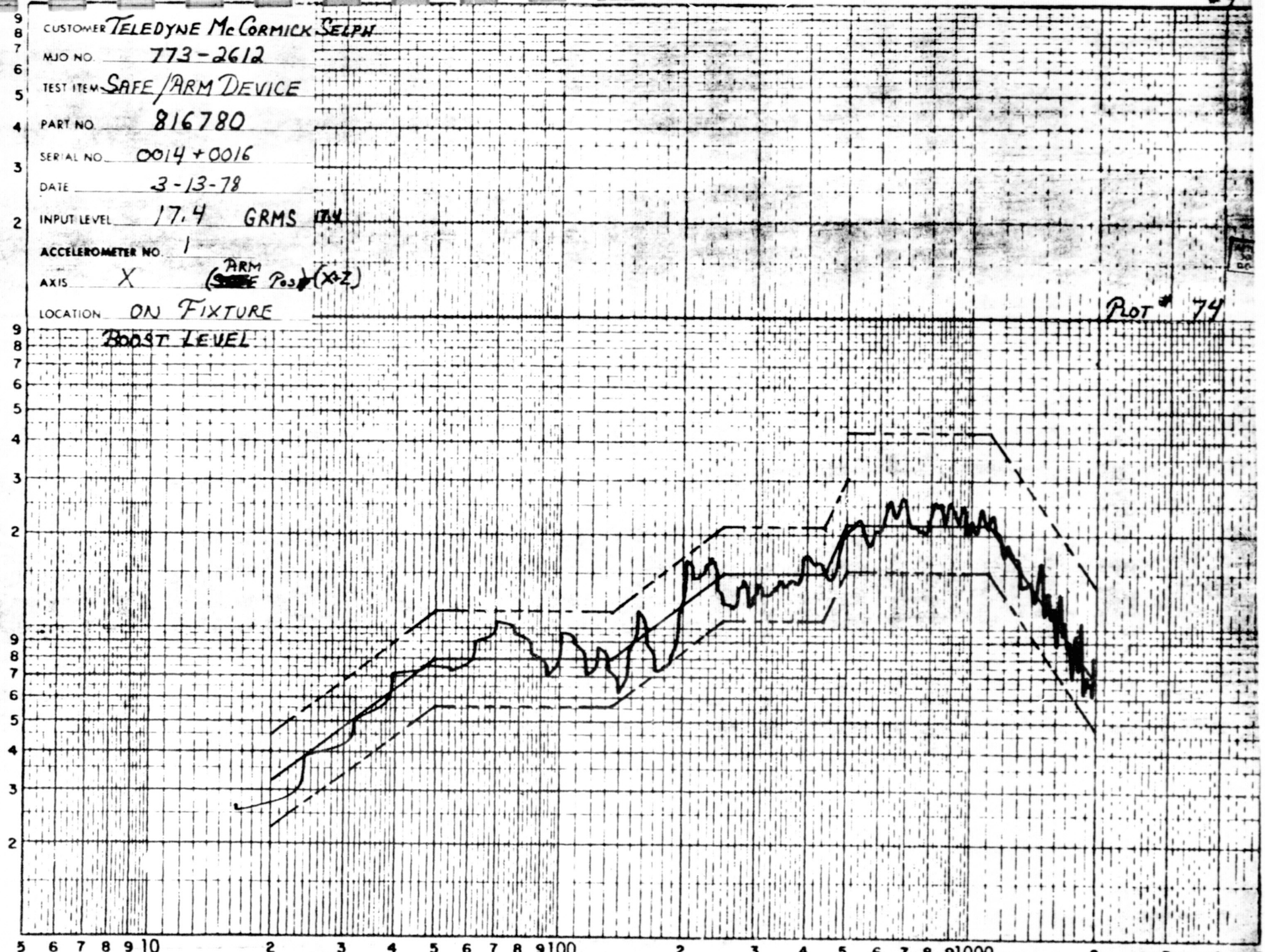
FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO. 816780
SERIAL NO. 0012 + 0013
DATE 3-10-78
INPUT LEVEL 17.4 GRMS
ACCELEROMETER NO. 1
AXIS Z
LOCATION ON FIXTURE
BOOST LEVEL
PLOT # 72
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

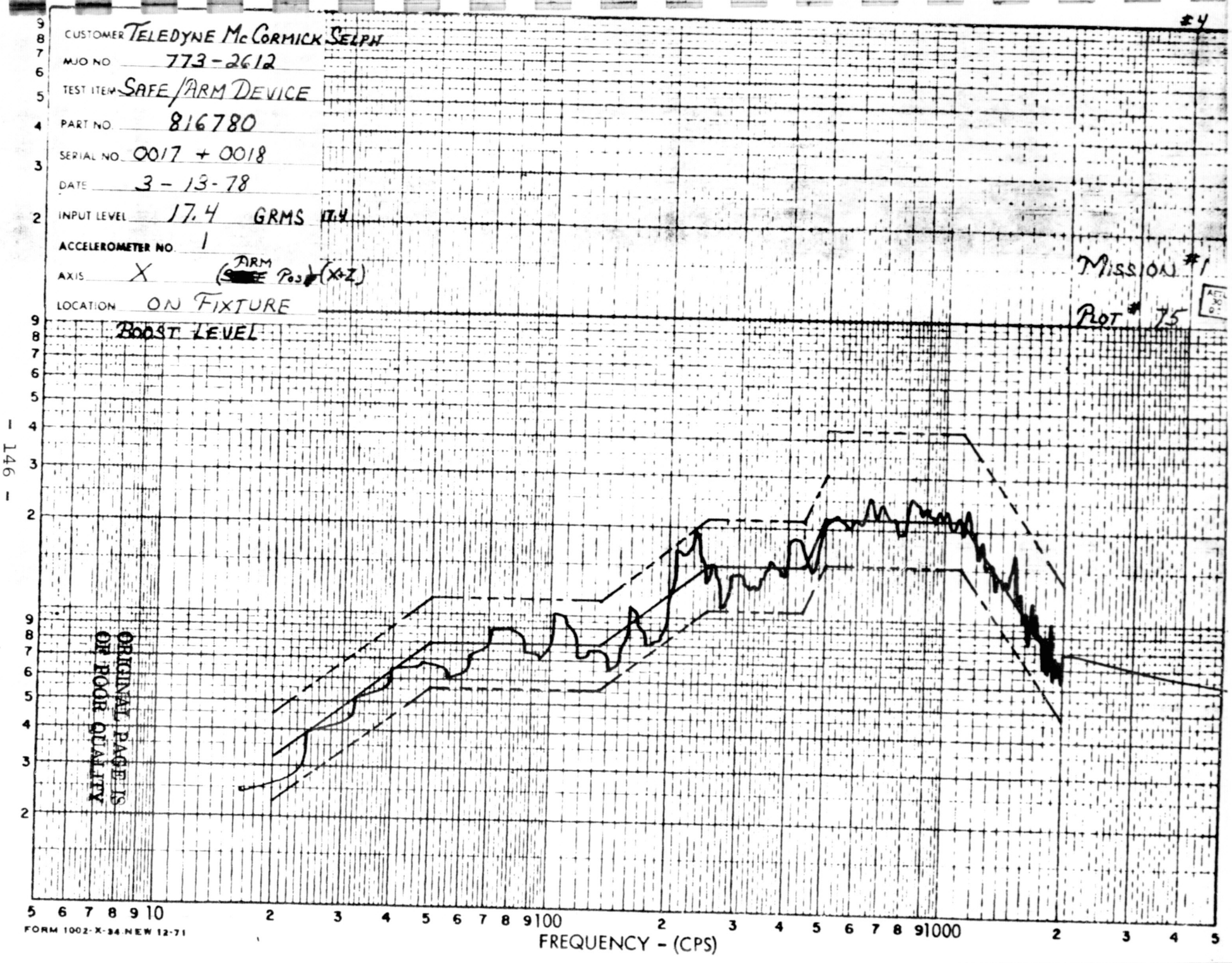

CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0014 + 0016
DATE 3-13-78
INPUT LEVEL 17.4 GRMS
ACCELEROMETER NO 1
AXIS Z (ARM Pos) (X+Z)
LOCATION ON FIXTURE
BOOST LEVEL
PLOT 73
ORIGINAL PAGE IS OF POOR QUALITY
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO. 816780
SERIAL NO. 0014 + 0016
DATE 3-13-78
INPUT LEVEL 17.4 GRMS
ACCELEROMETER NO. 1
AXIS X (ARM Pos) (X-Z)
LOCATION ON FIXTURE
BOOST LEVEL

PLOT # 74



FORM 1002-X-84 NEW 12-71


#4
CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0017 + 0018
DATE 3-13-78
INPUT LEVEL 17.4 GRMS 17.4
ACCELEROMETER NO 1
AXIS X (ARM Pos (X+Z)
LOCATION ON FIXTURE
BOOST LEVEL
MISSION #1
PLOT # 75
ORIGINAL PAGE IS OF POOR QUALITY
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

#4

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0017 + 0018

DATE 3-13-78

INPUT LEVEL 17.4 GRMS 17.4

ACCELEROMETER NO 1

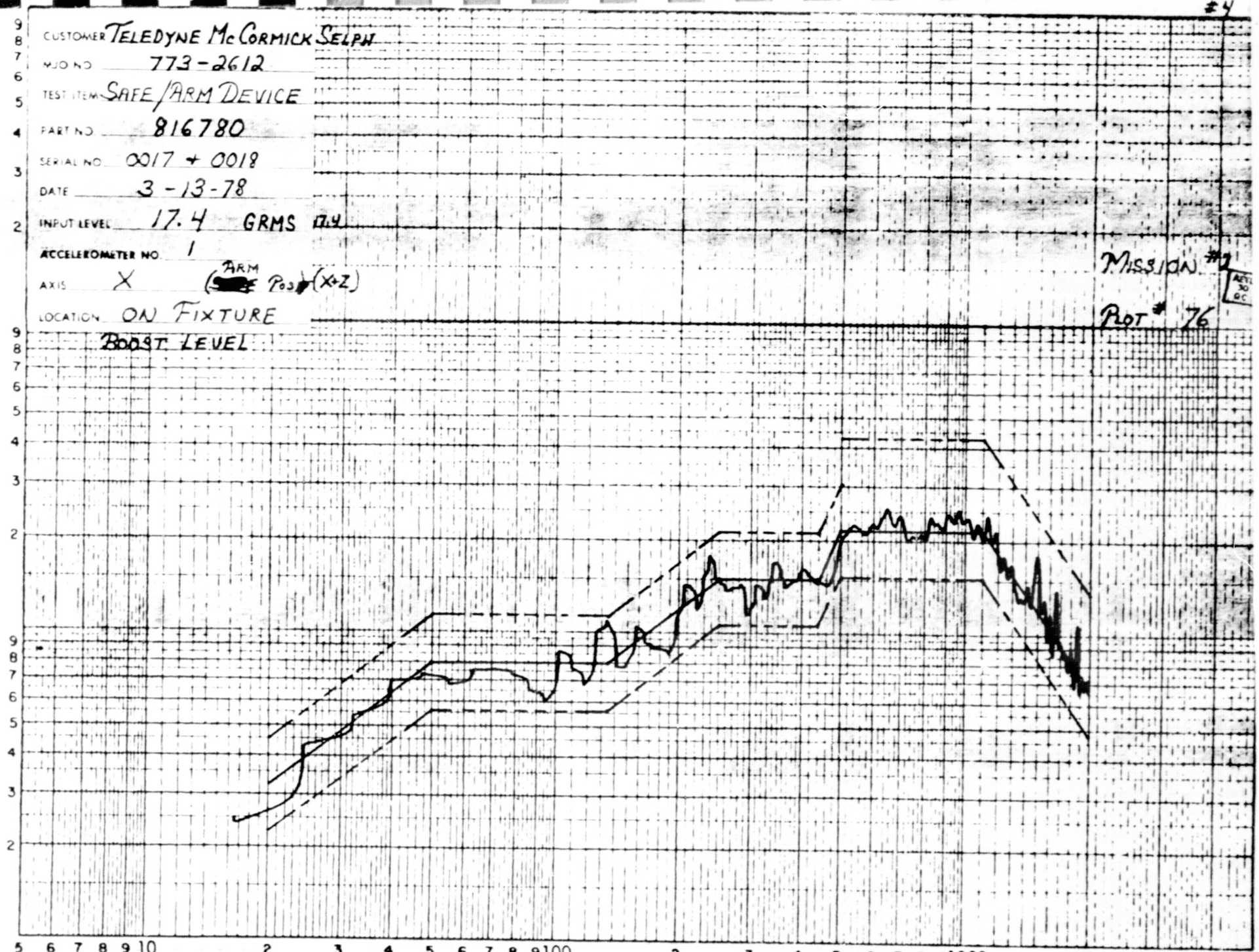
AXIS X (ARM [redacted] Pos) (X+Z)

LOCATION ON FIXTURE

BOOST LEVEL

MISSION #1

PLOT # 76



FORM 1002-X-34 N.E.® 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO 0017 + 0018

DATE 3-13-78

INPUT LEVEL 17.4 GRMS 17.4

ACCELEROMETER NO 1

AXIS Z (ARM Pos) (X+Z)

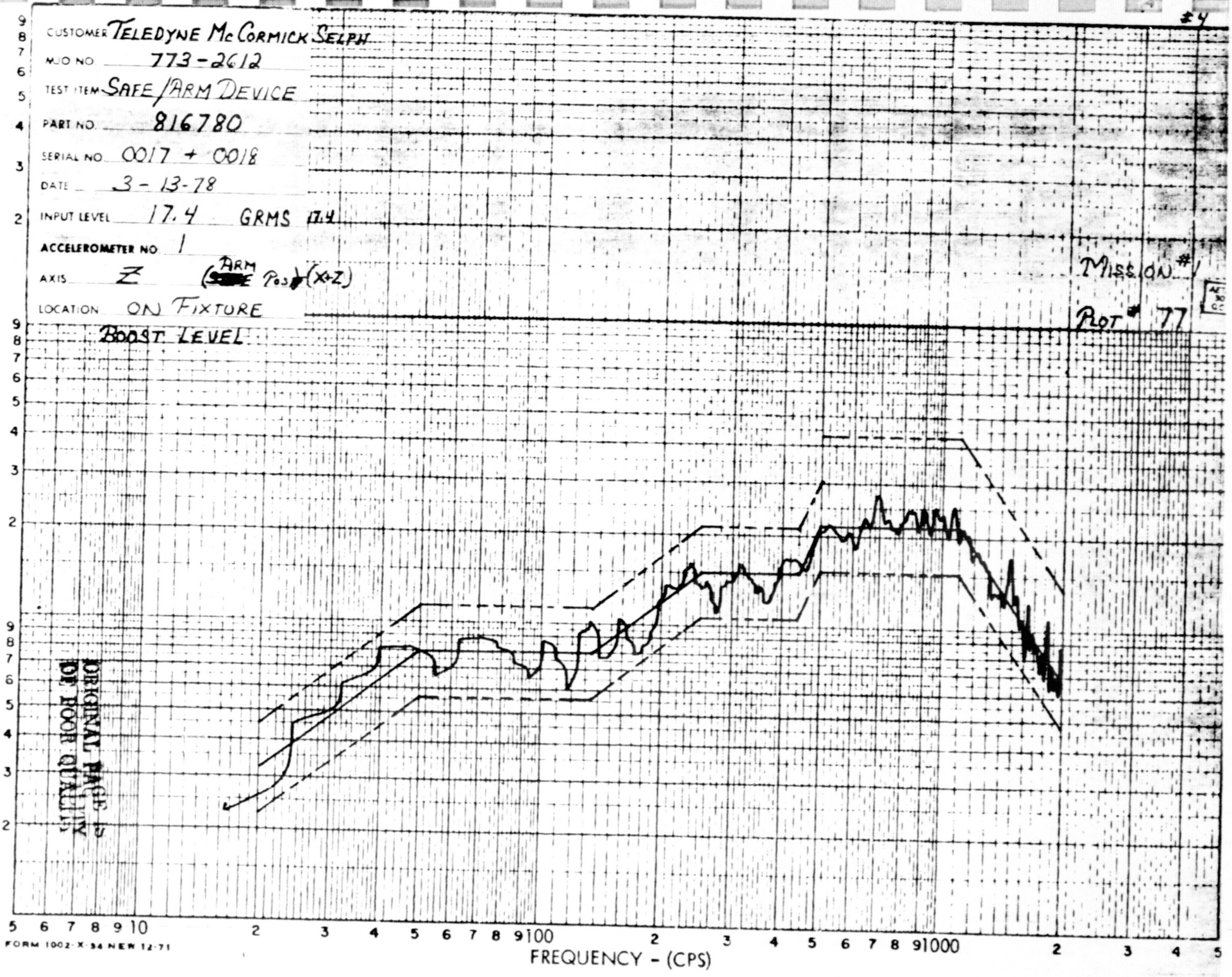
LOCATION ON FIXTURE

BOOST LEVEL

#4

MISSION #1

PLOT # 77



FORM 1002-X-34 NEW 12-71

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OF POOR QUALITY

#4

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO. 0017 + 0018

DATE 3-13-78

INPUT LEVEL 17.4 GRMS 17.4

ACCELEROMETER NO 1

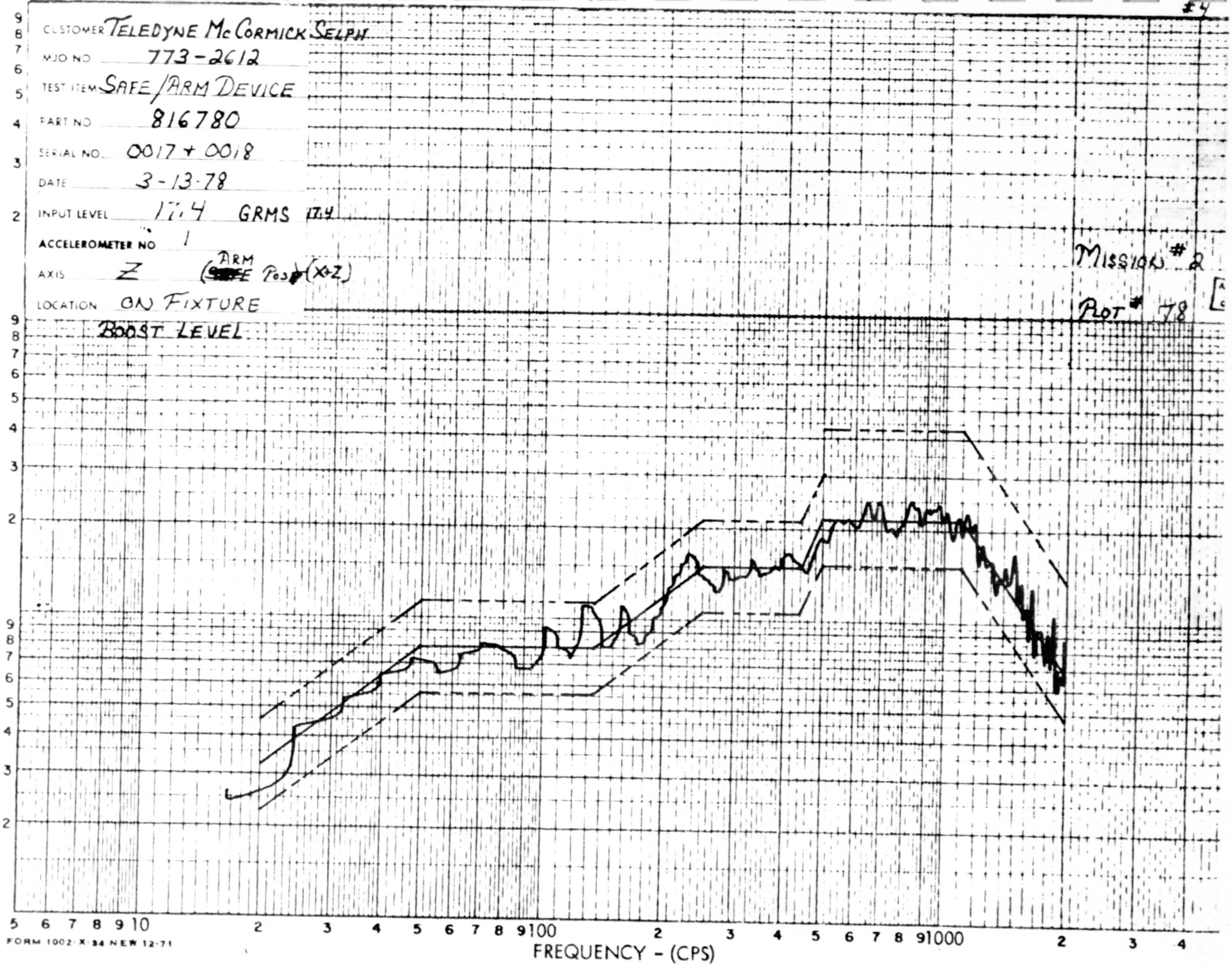
AXIS Z (ARM Pos (X+Z)

LOCATION ON FIXTURE

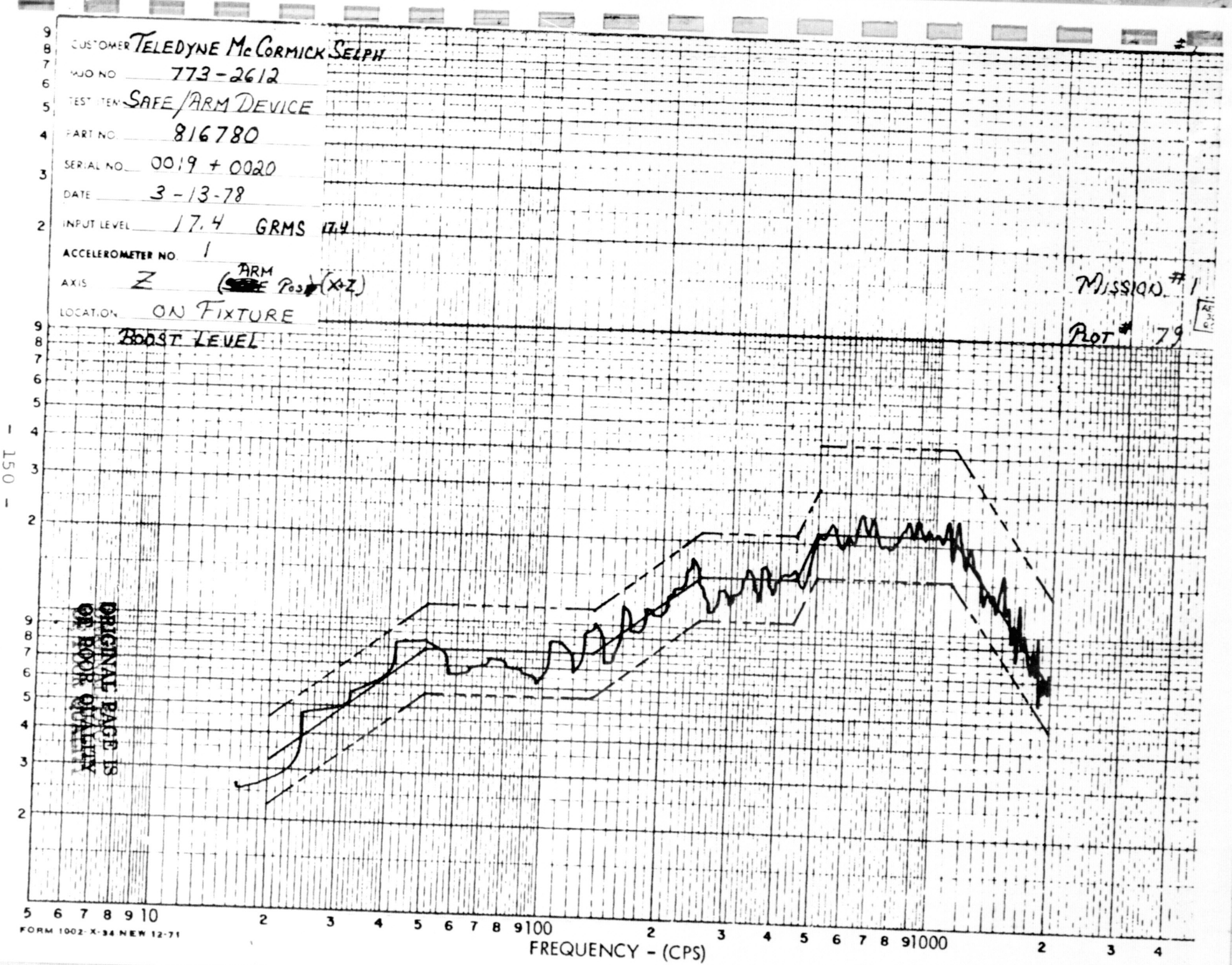
BOOST LEVEL

MISSION #2

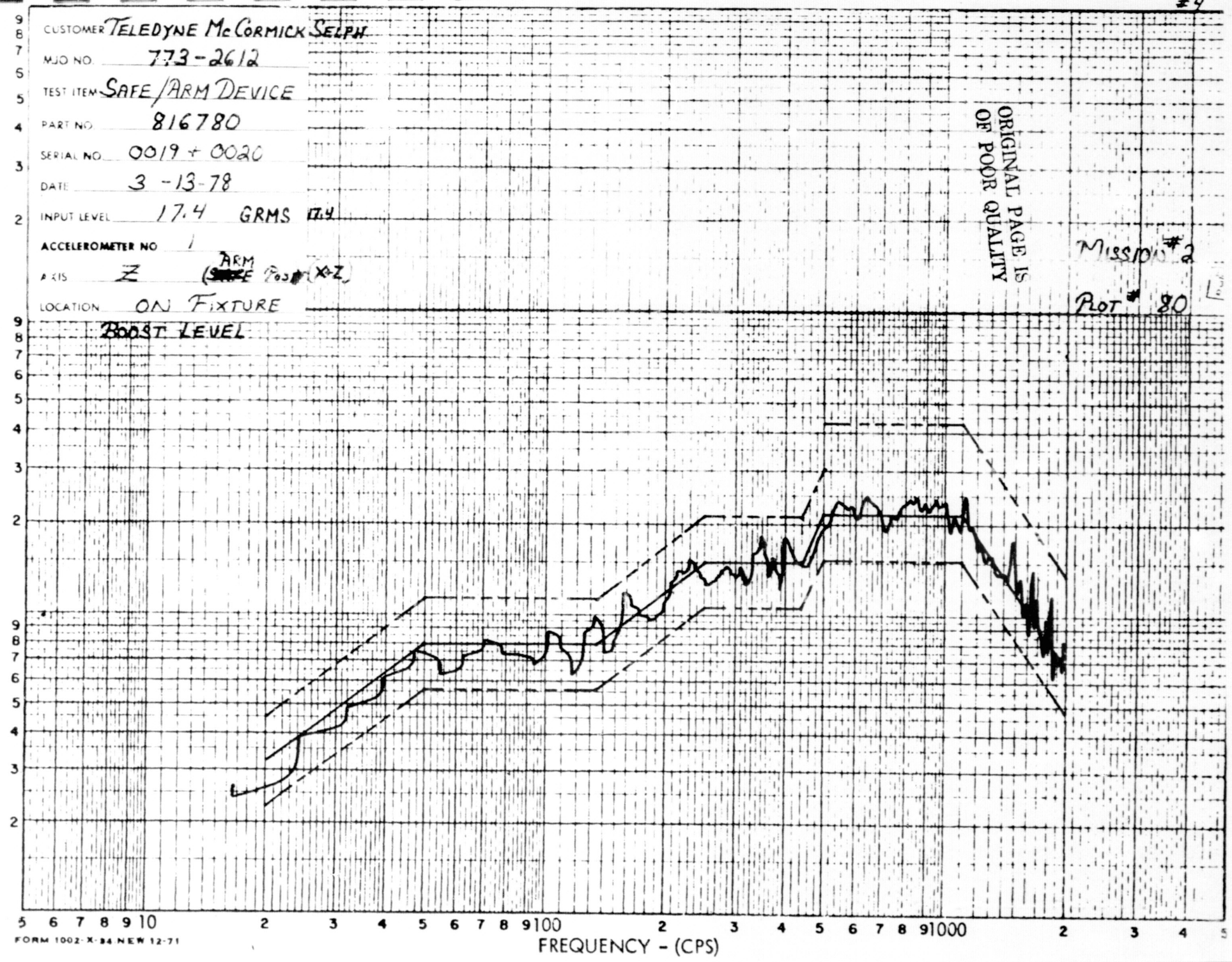
PLOT # 78

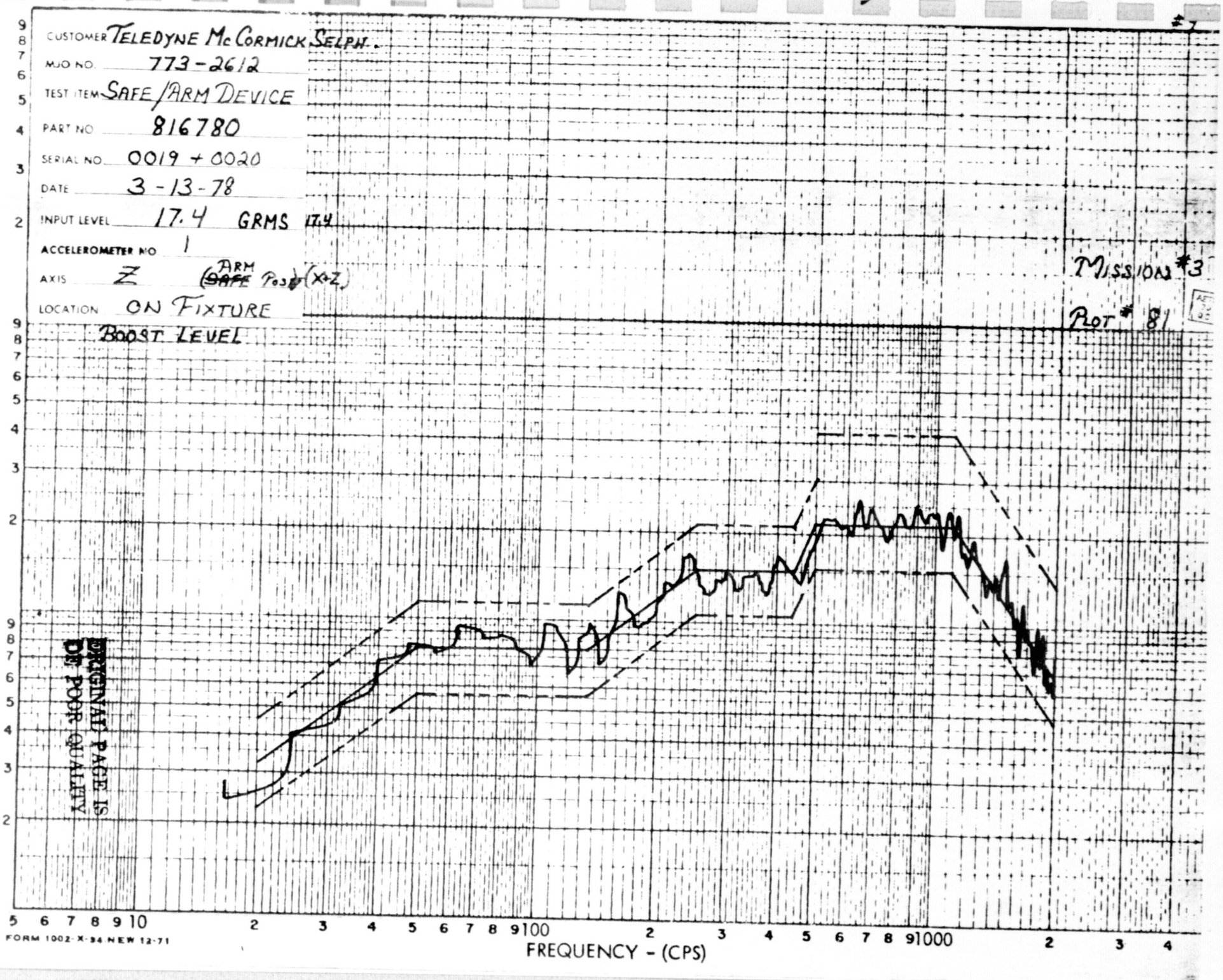


FORM 1002-X-34 NEW 12-71



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CUSTOMER TELEDYNE McCORMICK SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO. 816780
SERIAL NO. 0019 + 0020
DATE 3-13-78
INPUT LEVEL 17.4 GRMS 17.4
ACCELEROMETER NO 1
AXIS Z (ARM Pos X-Z)
LOCATION ON FIXTURE
BOOST LEVEL
ORIGINAL PAGE IS OF POOR QUALITY
MISSION #2
PLOT # 80
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71



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CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0019 +0020

DATE 3-13-78

INPUT LEVEL 17.4 GRMS 17.4

ACCELEROMETER NO 1

AXIS X (A.M SAFE Pos (X-Z)

LOCATION ON FIXTURE

BOOST LEVEL

MISSION # 1

PLOT # 82

AEL SD 10C

9 8 7 6 5 4 3 2

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE M. CORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0019 + 0020

DATE 3-13-78

INPUT LEVEL 17.4 GRMS 17.4

ACCELEROMETER NO. 1

AXIS X (ARM ~~SAFE~~ Pos) (X-Z)

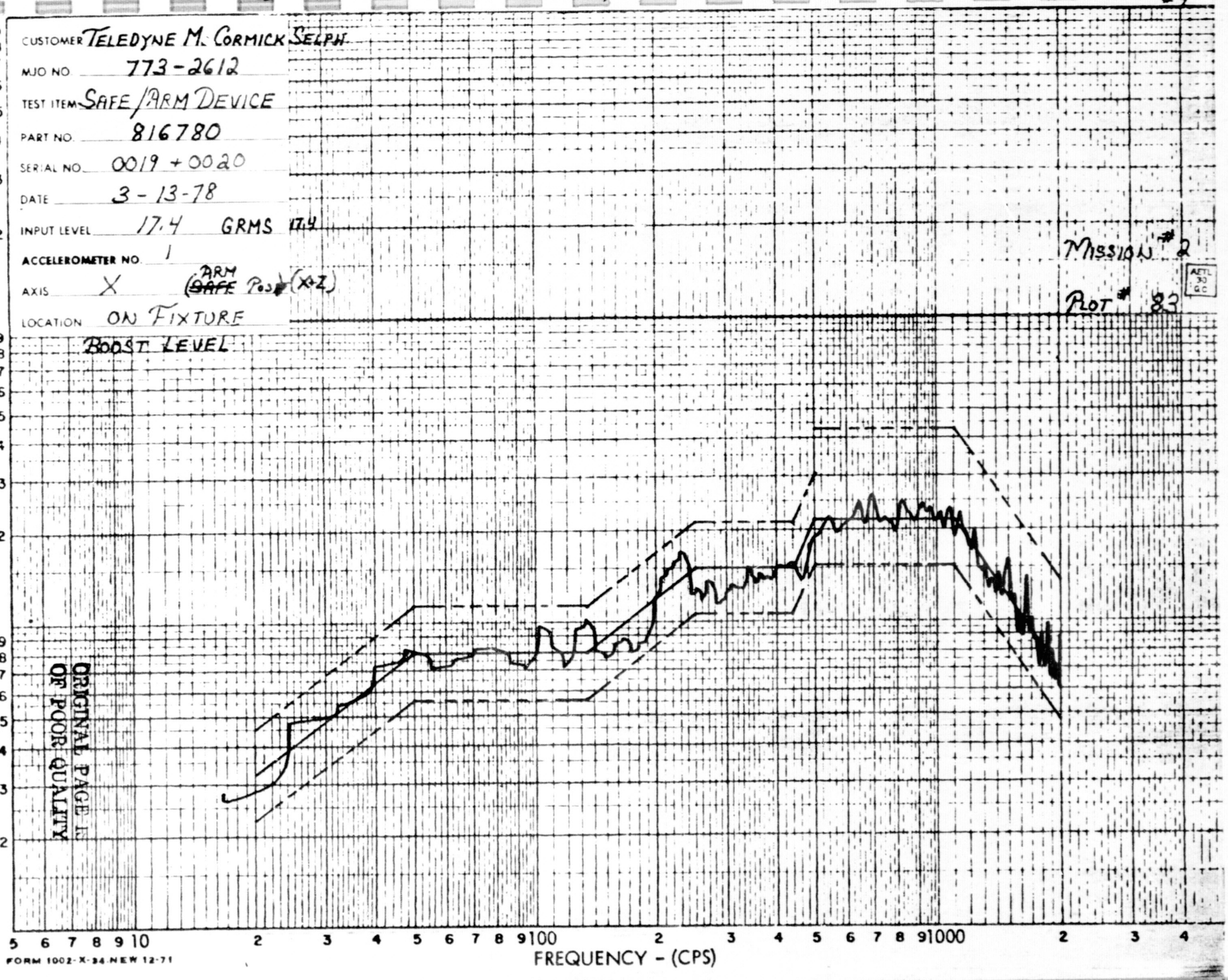
LOCATION ON FIXTURE

BOOST LEVEL

MISSION #2

PLOT # 83

AETL 30 GC



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FORM 1002-X-34 NEW 12-71

CUSTOMER TELEDYNE McCORMICK SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0019 + 0020

DATE 3-13-78

INPUT LEVEL 17.4 GRMS 17.4

ACCELEROMETER NO. 1

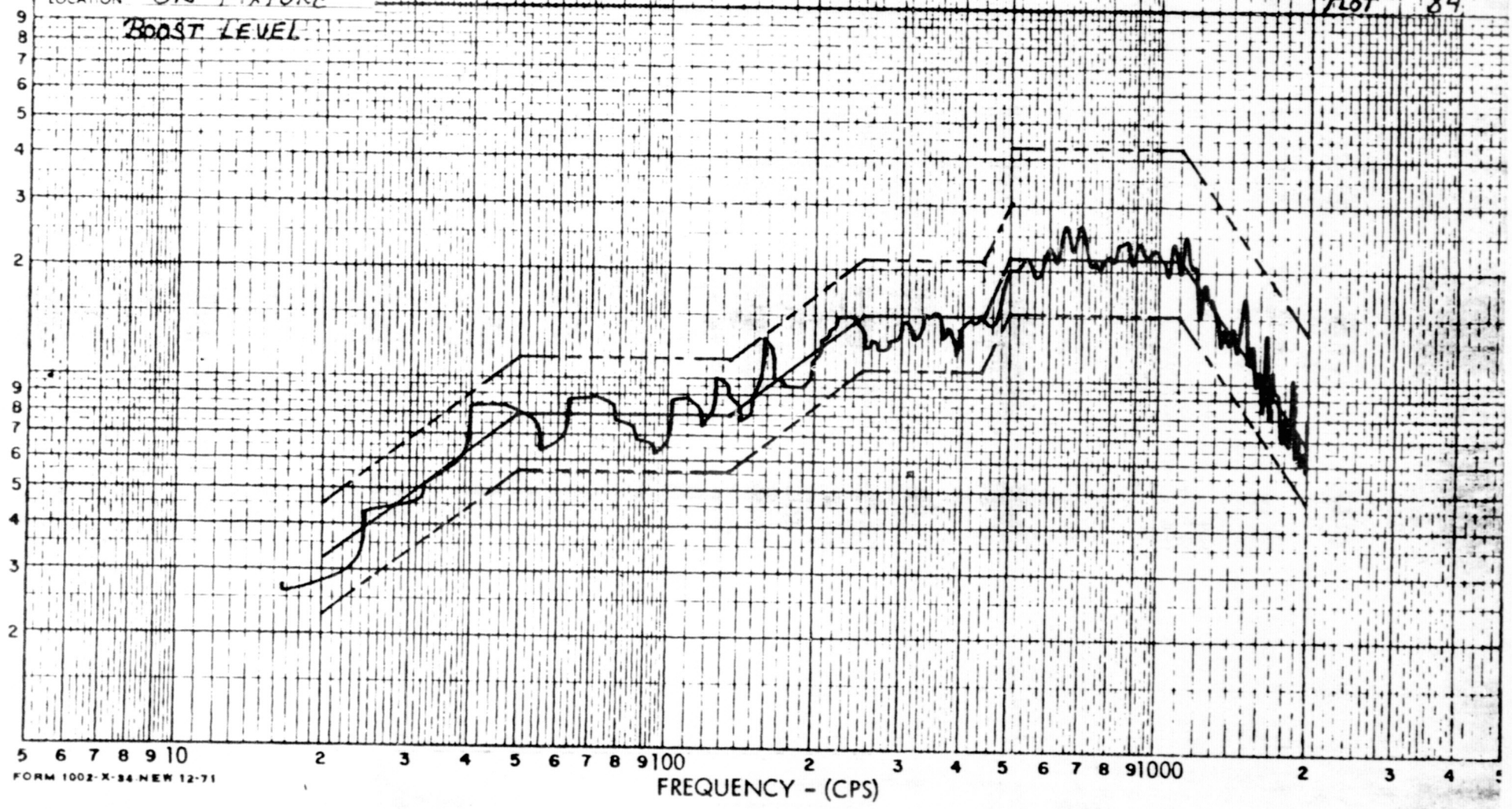
AXIS X (ARM ~~SAFE~~ Pos.) (X-Z)

LOCATION ON FIXTURE

BOOST LEVEL

Mission #3

Plot # 84



FORM 1002-X-34 NEW 12-71

#5

CUSTOMER TELEDYNE McCORMIC SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO FIXTURE

DATE 3-13-78

INPUT LEVEL 11.9 GRMS 11.9

ACCELEROMETER NO 1

AXIS [redacted] (SAFE POS.) Y

LOCATION ON FIXTURE

REENTRY LEVEL

EQUALIZATION

PLOT # 85

1.0

0.1

.01

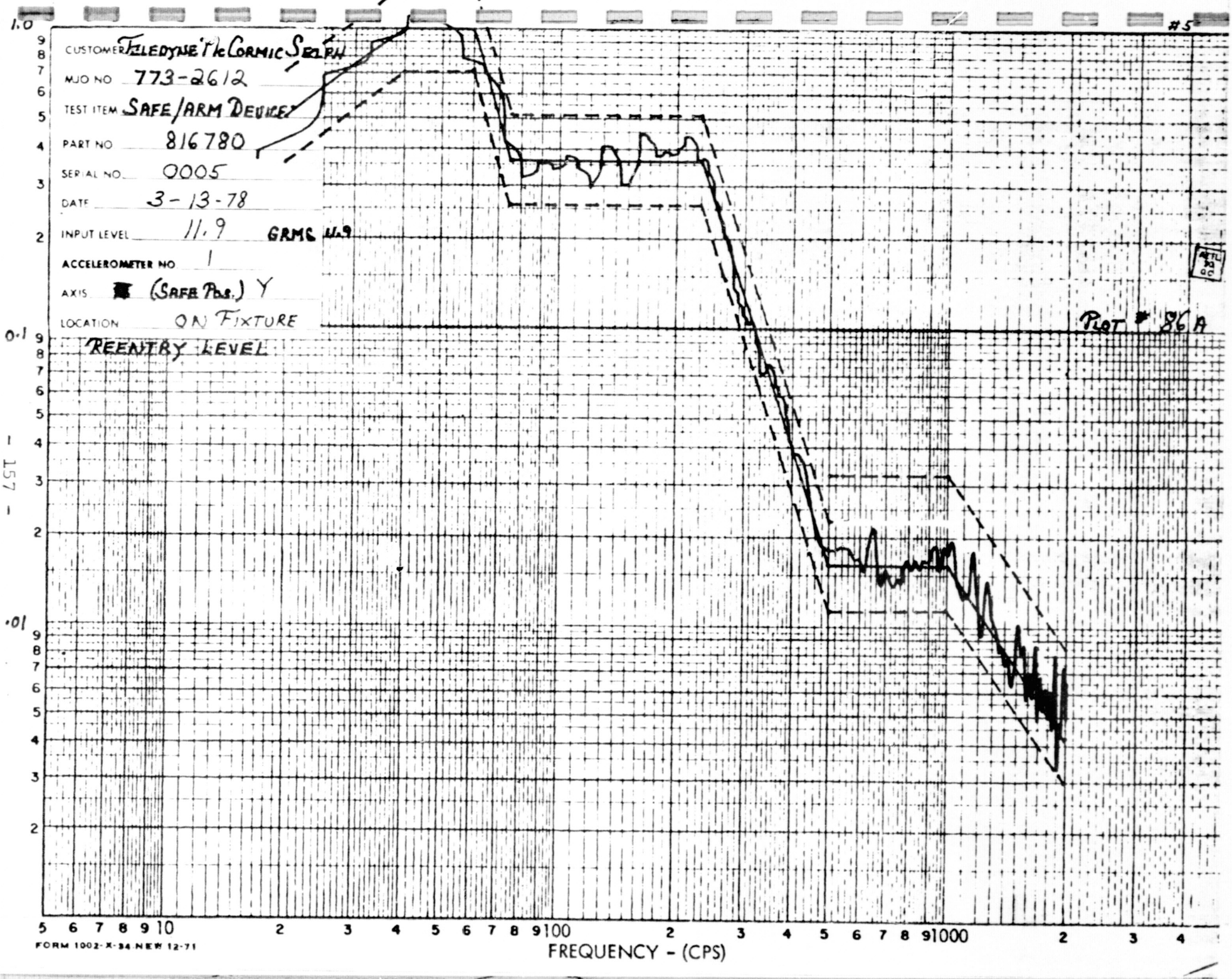
1 - 956 - 1

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 91000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

ORIGINAL PAGE IS OF POOR QUALITY


CUSTOMER FLEDYNE / McCORMIC SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0005
DATE 3-13-78
INPUT LEVEL 11.9 GRMS 11.9
ACCELEROMETER NO 1
AXIS (SAFE POS.) Y
LOCATION ON FIXTURE
REENTRY LEVEL
PLOT # 86A
#5
1.0
0.1
.01
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

#5

CUSTOMER TELEDYNE McCORMIC SELPH

M.O. NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO. 0005

DATE 3-13-78

INPUT LEVEL 12.0 GRMS 11.9

ACCELEROMETER NO. 2

AXIS (SAFE POS.) Y

LOCATION ON S/A DEVICE

REENTRY LEVEL

PLOT # 86B

1.0

0.1

.01

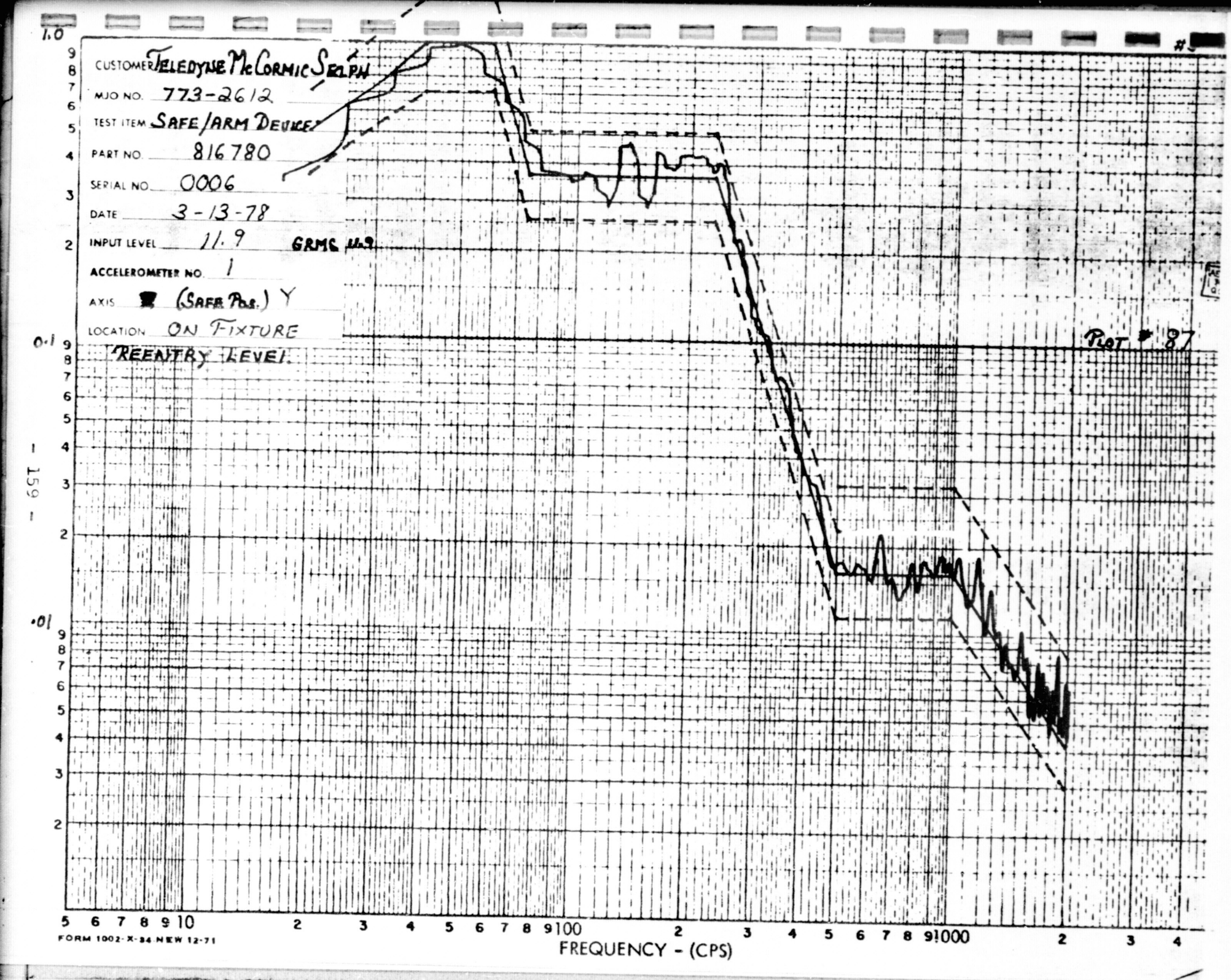
ACCELERATION - G²/CPS

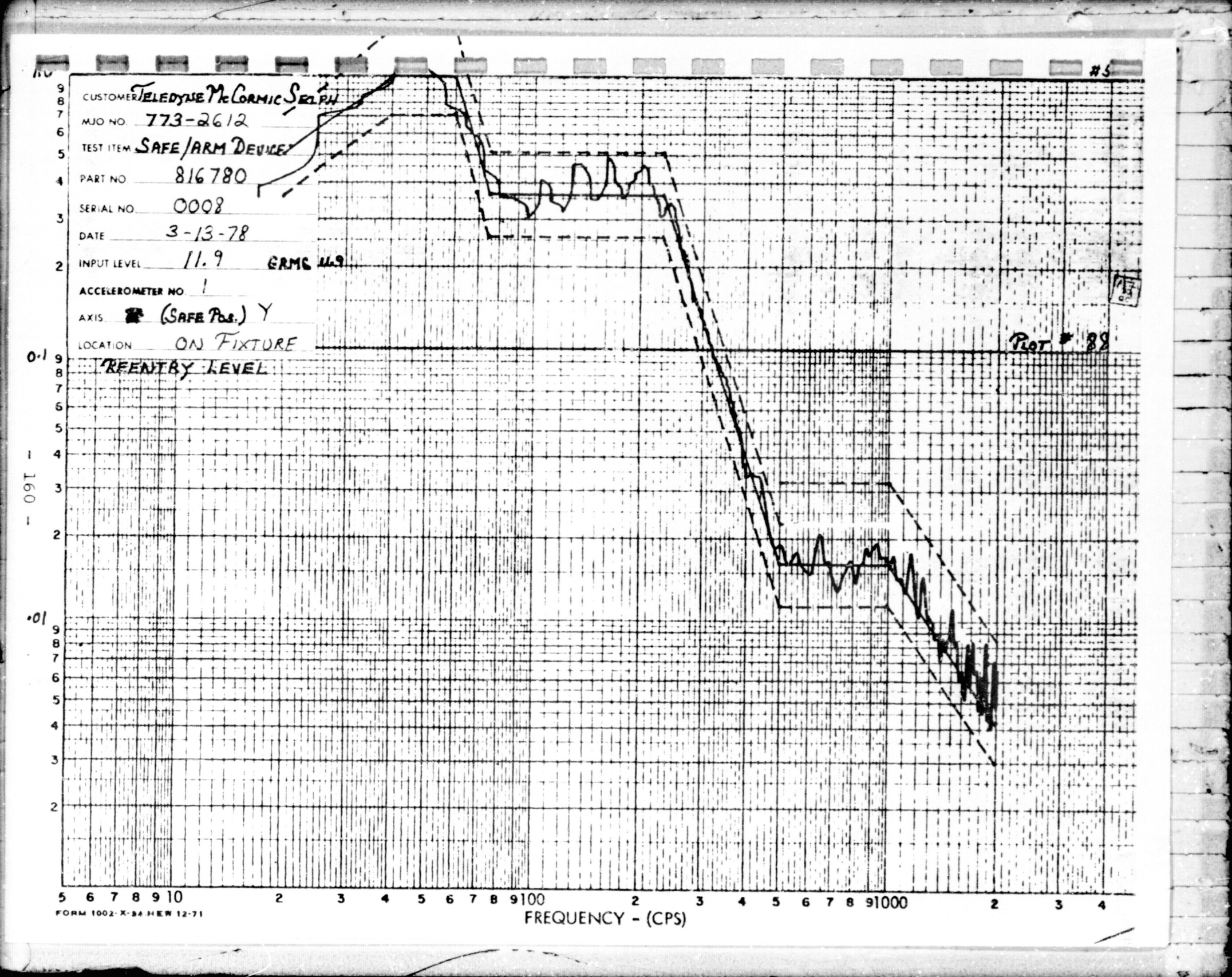
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

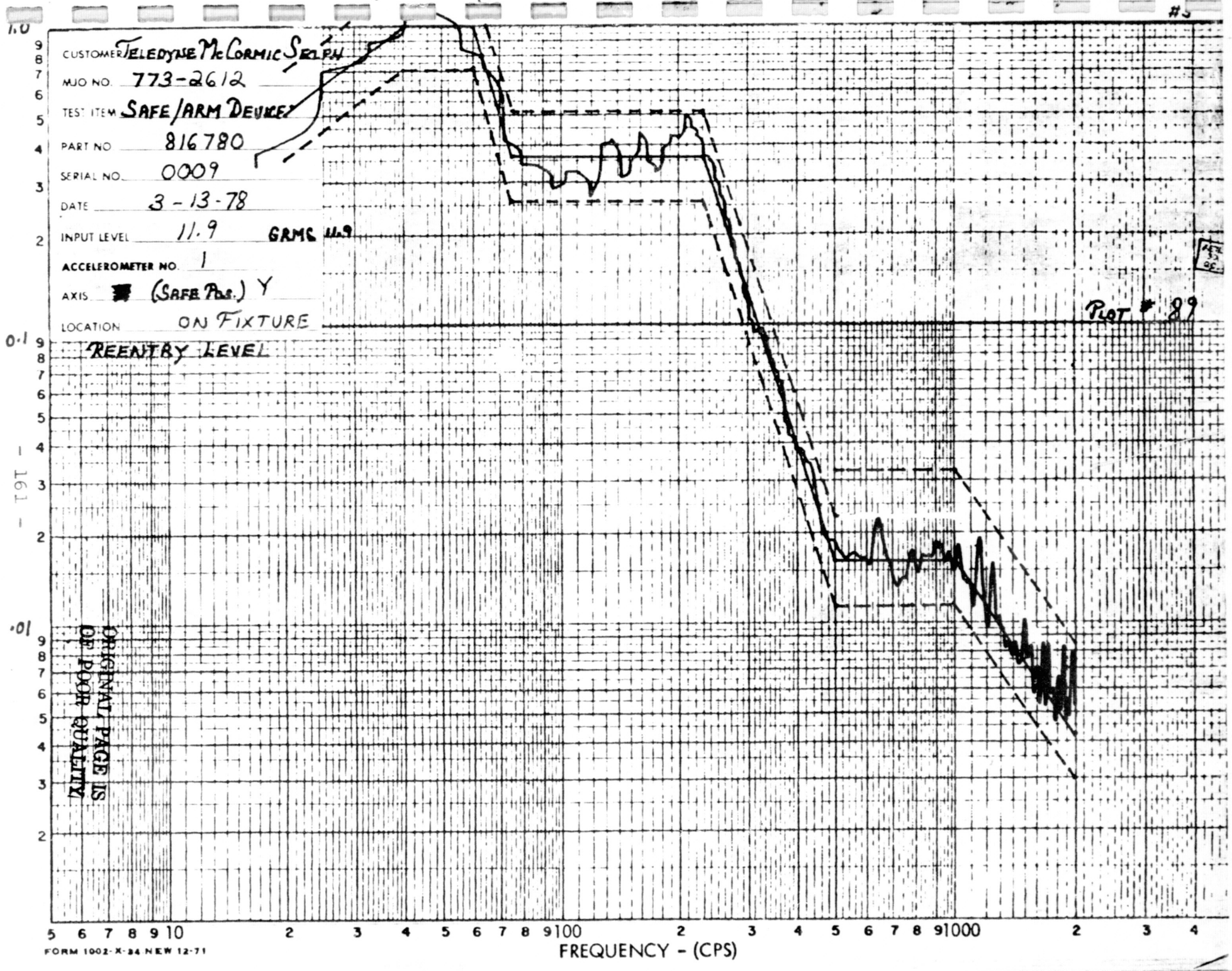
FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

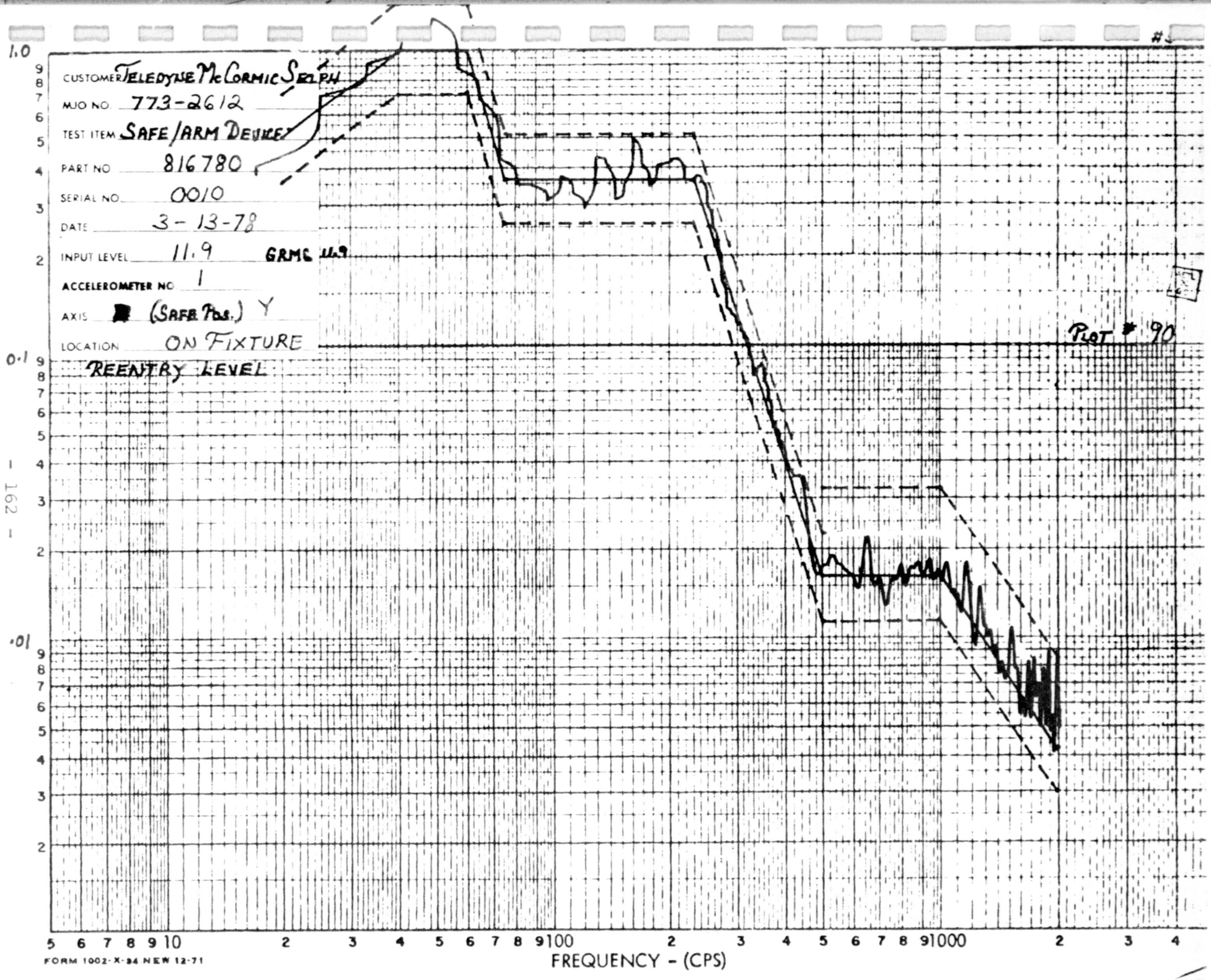
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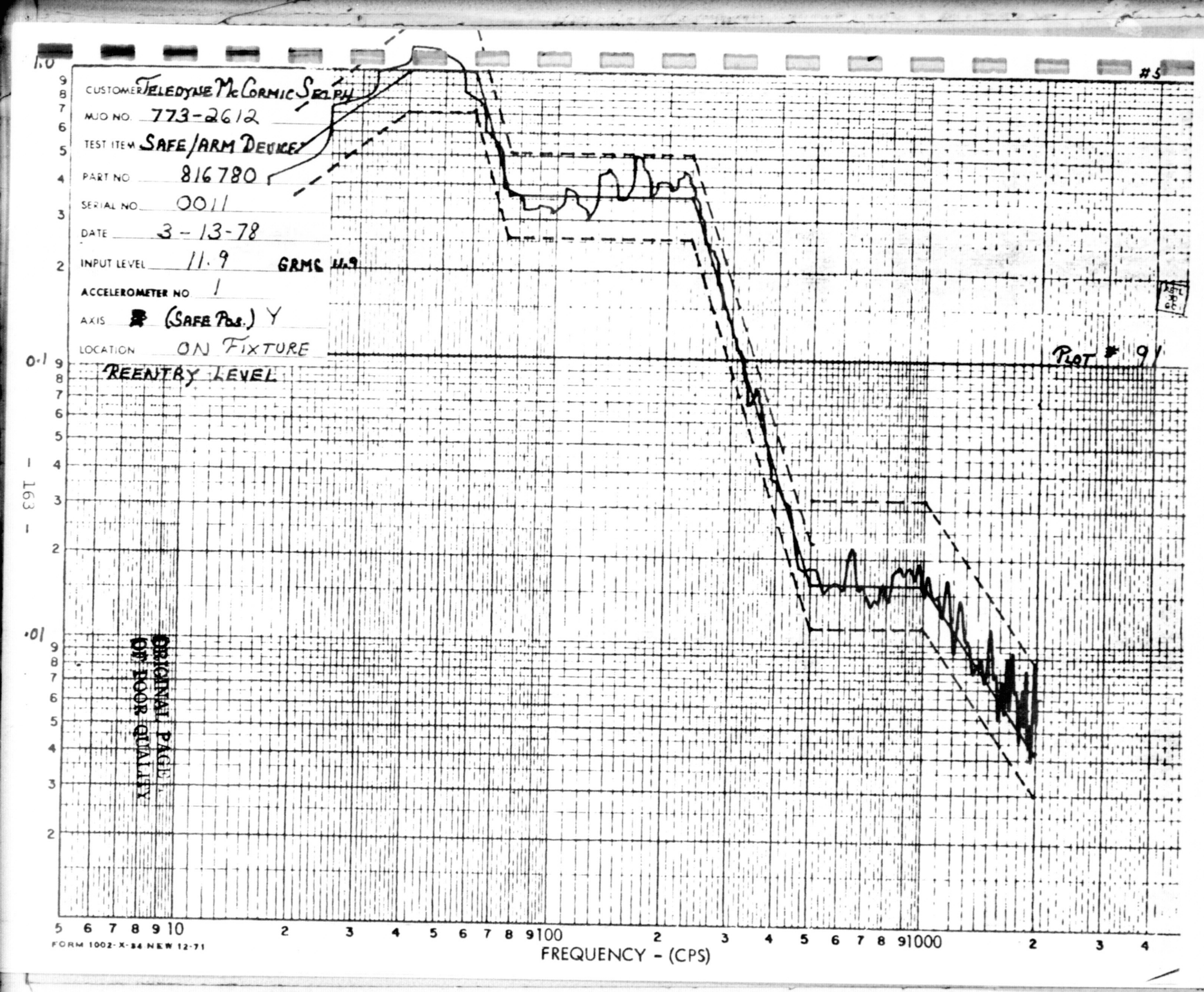

CUSTOMER TELEDYNE McCORMIC SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO. 816780
SERIAL NO. 0006
DATE 3-13-78
INPUT LEVEL 11.9 GRMS
ACCELEROMETER NO. 1
AXIS (SAFE Pos.) Y
LOCATION ON FIXTURE
REENTRY LEVEL
PLOT # 87
1.0
0.1
.01
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71


CUSTOMER TELEDYNE McCORMIC SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0008
DATE 3-13-78
INPUT LEVEL 11.9 GRMS 11.9
ACCELEROMETER NO 1
AXIS (SAFE Pos.) Y
LOCATION ON FIXTURE
REENTRY LEVEL
PLOT # 88
#5
0.1
.01
- 160 -
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FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

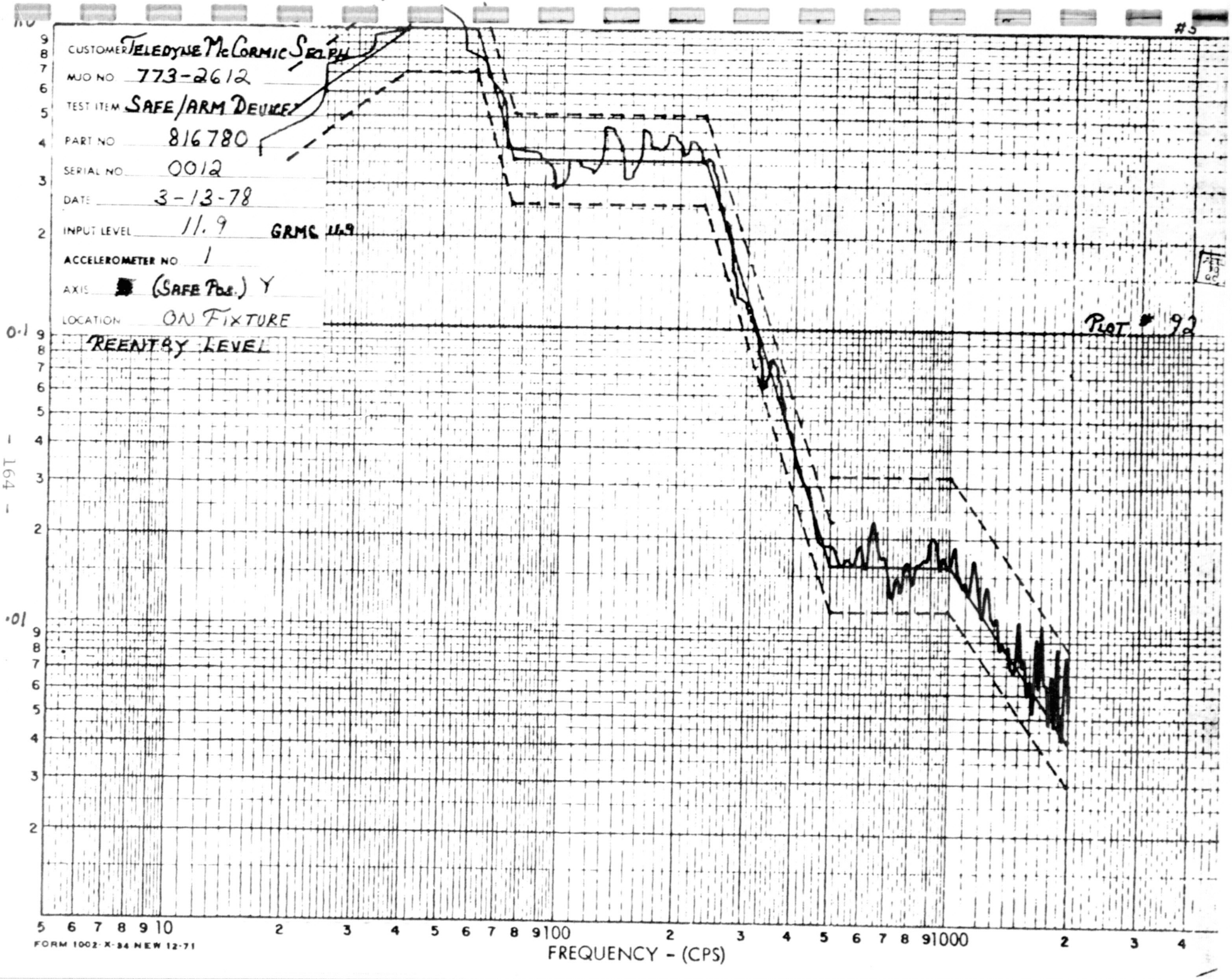


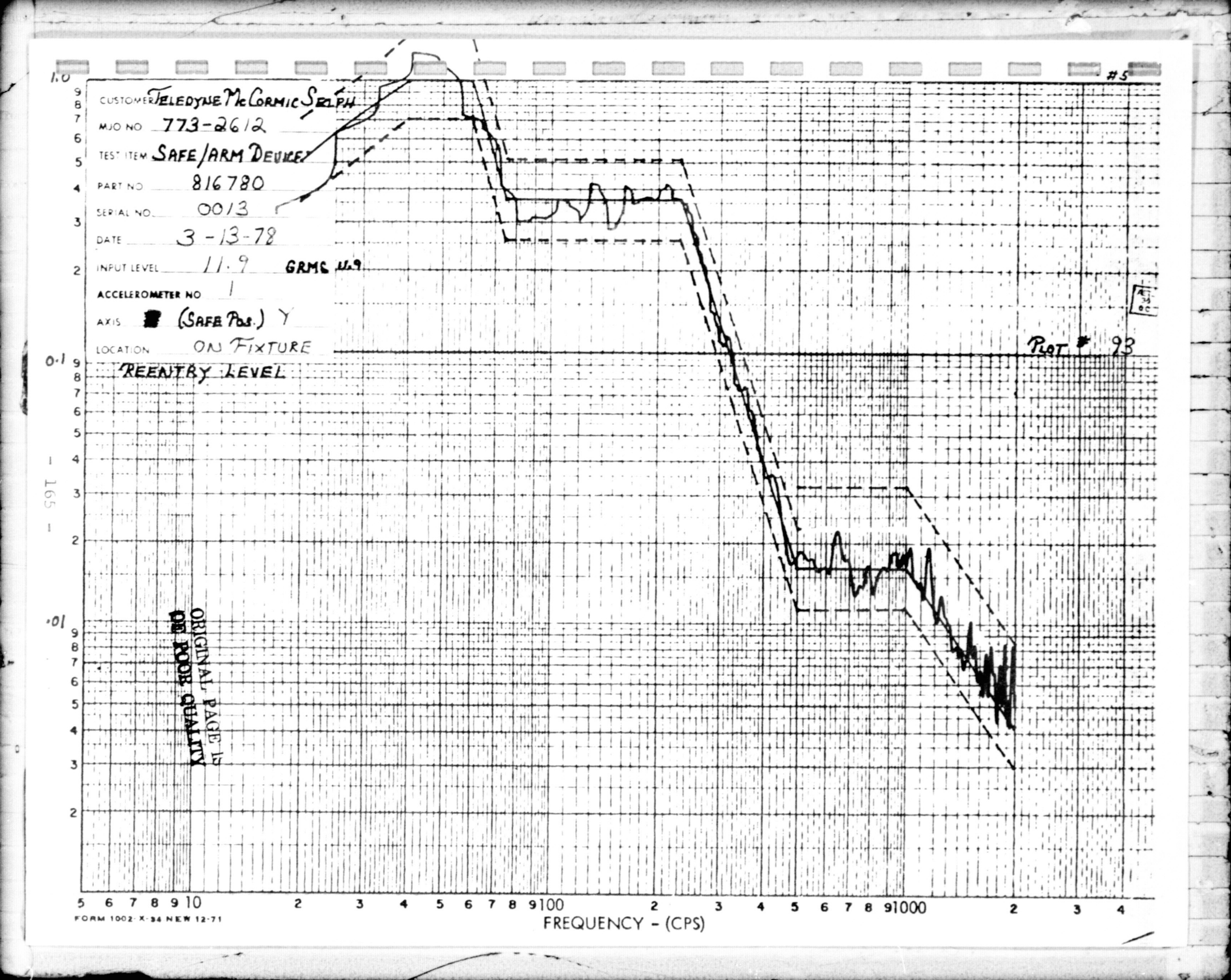
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CUSTOMER TELEDYNE McCORMIC SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO. 0010
DATE 3-13-78
INPUT LEVEL 11.9 GRMS 11.9
ACCELEROMETER NO 1
AXIS (SAFE POS.) Y
LOCATION ON FIXTURE
REENTRY LEVEL
PLOT # 90
1.0
0.1
.01
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71



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CUSTOMER TELEDYNE McCORMIC SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0012
DATE 3-13-78
INPUT LEVEL 11.9 GRMS 11.9
ACCELEROMETER NO 1
AXIS (SAFE POS.) Y
LOCATION ON FIXTURE
REENTRY LEVEL
PLOT # 92
#3
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71



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#5

CUSTOMER TELEDYNE McCORMIC SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0014

DATE 3-13-78

INPUT LEVEL 11.9 GRMS 11.9

ACCELEROMETER NO 1

AXIS ■ (SAFE POS.) Y

LOCATION ON FIXTURE

REENTRY LEVEL

PLOT # 94

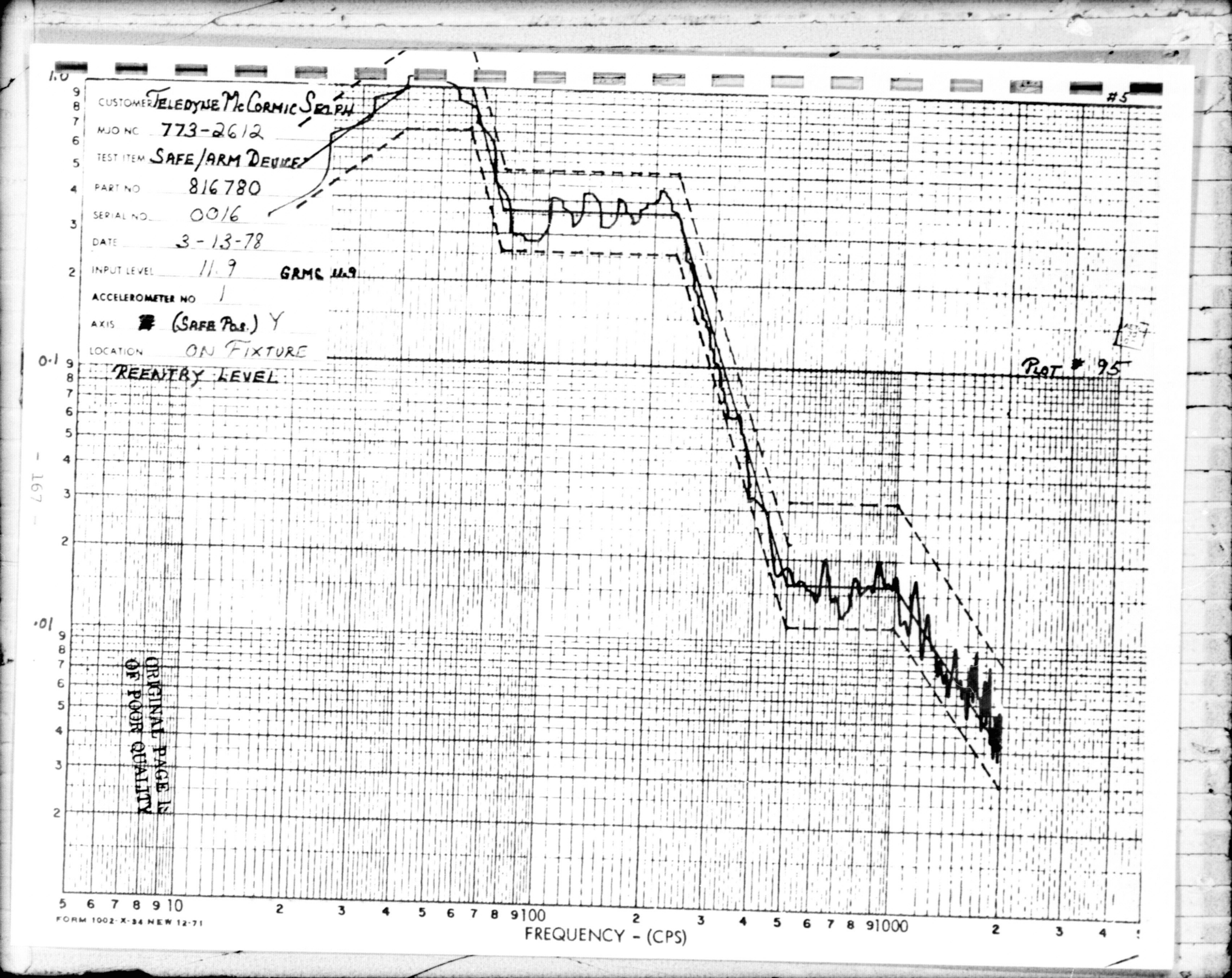
1.0
0.1
.01

- 166 -

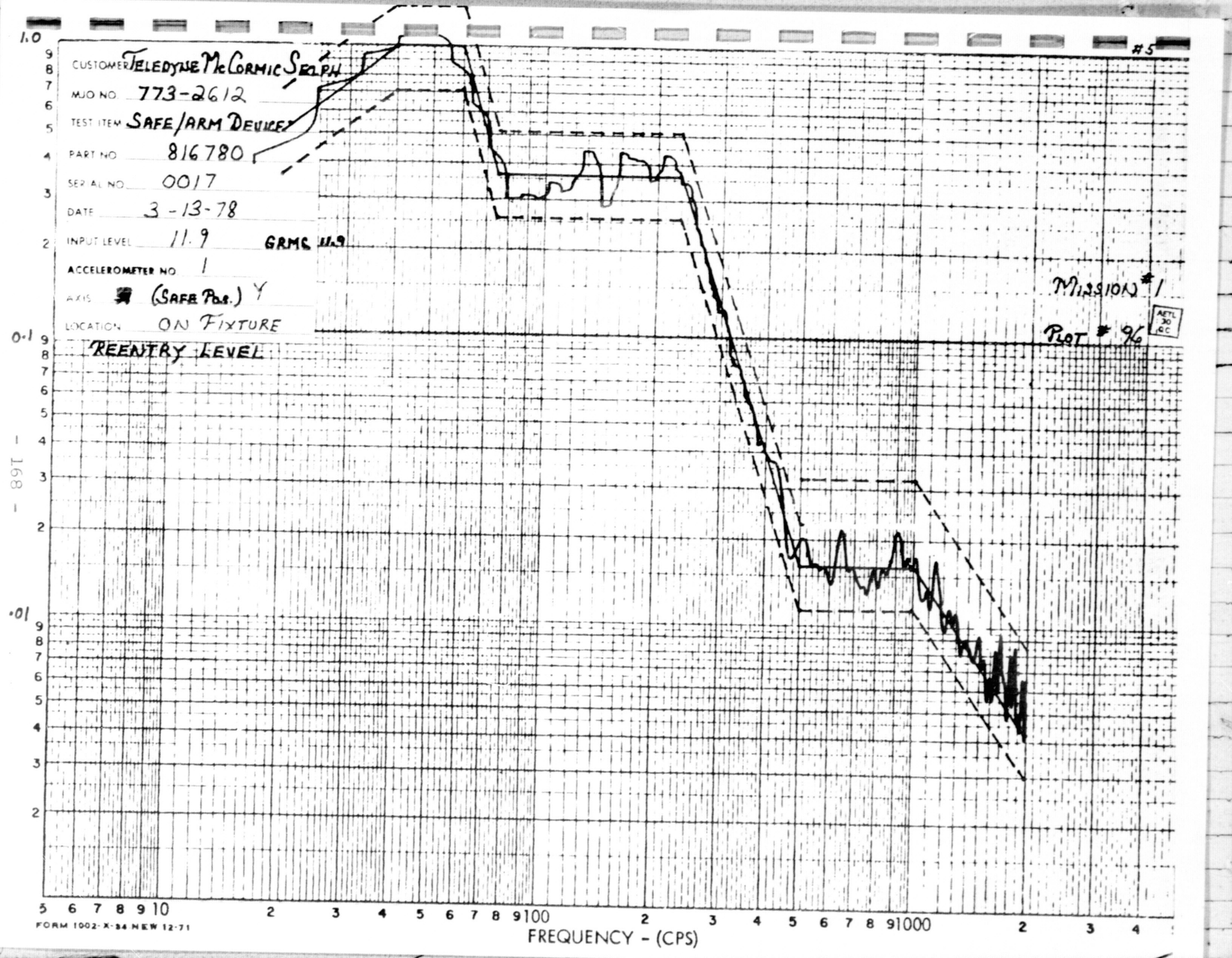
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

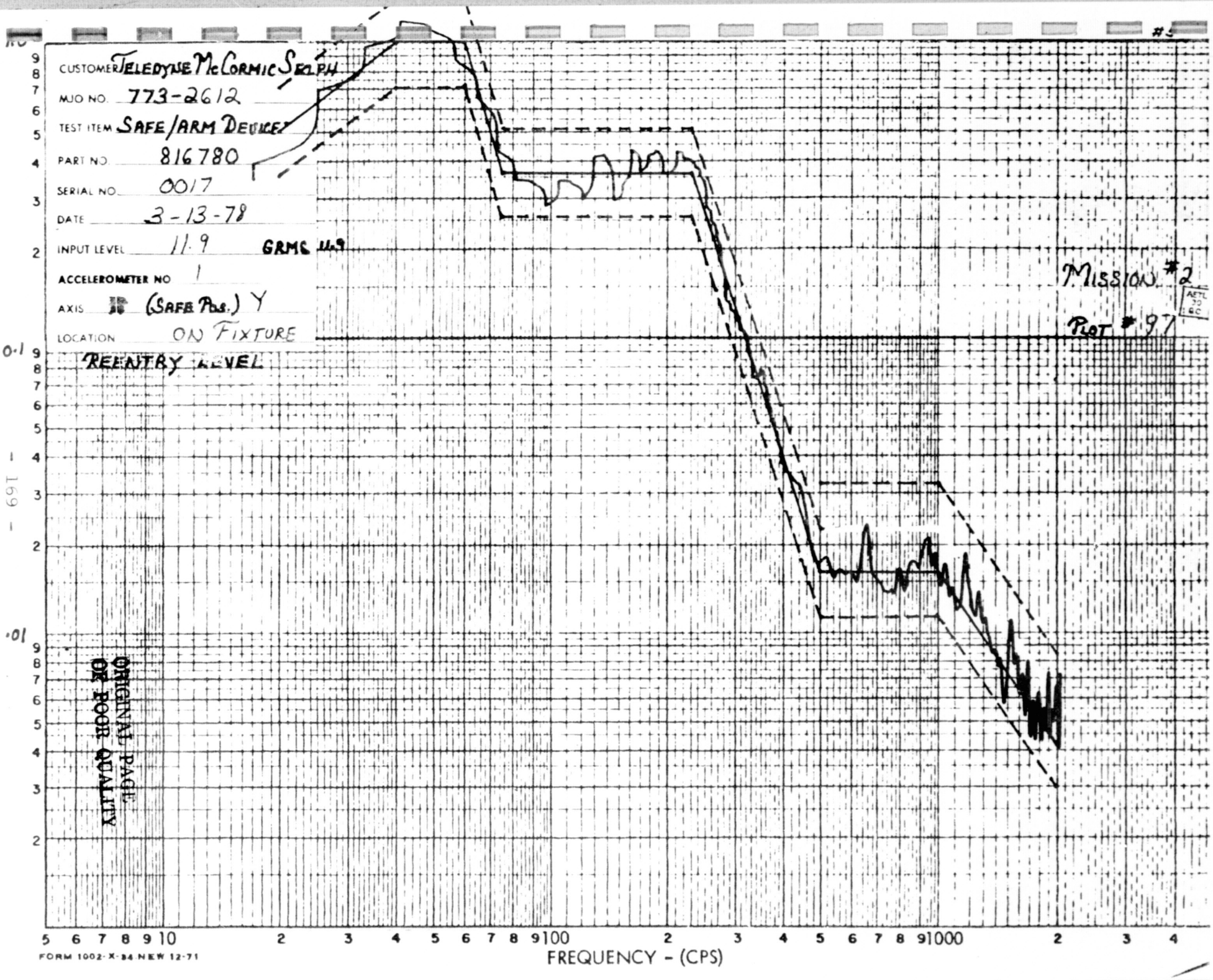
FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

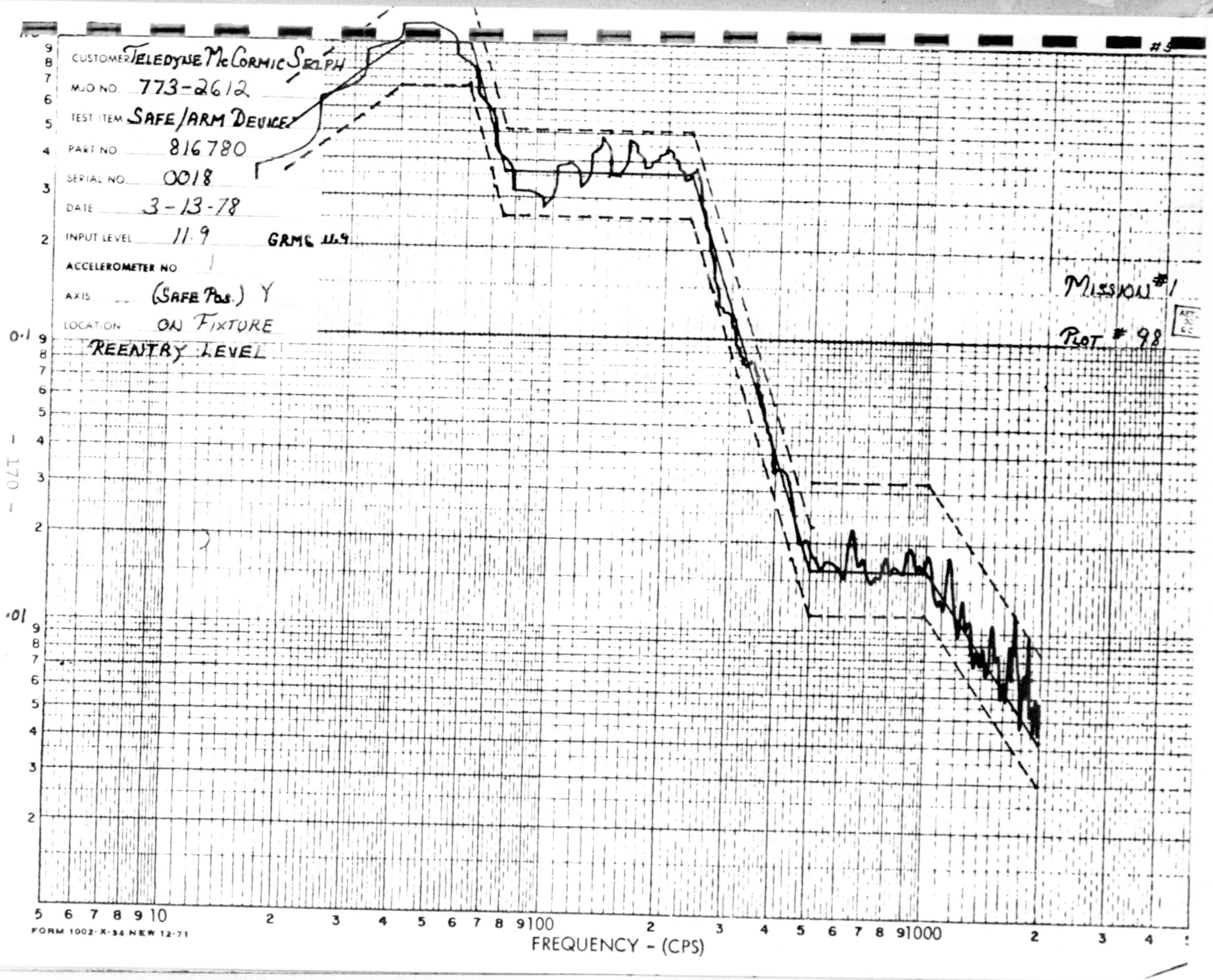


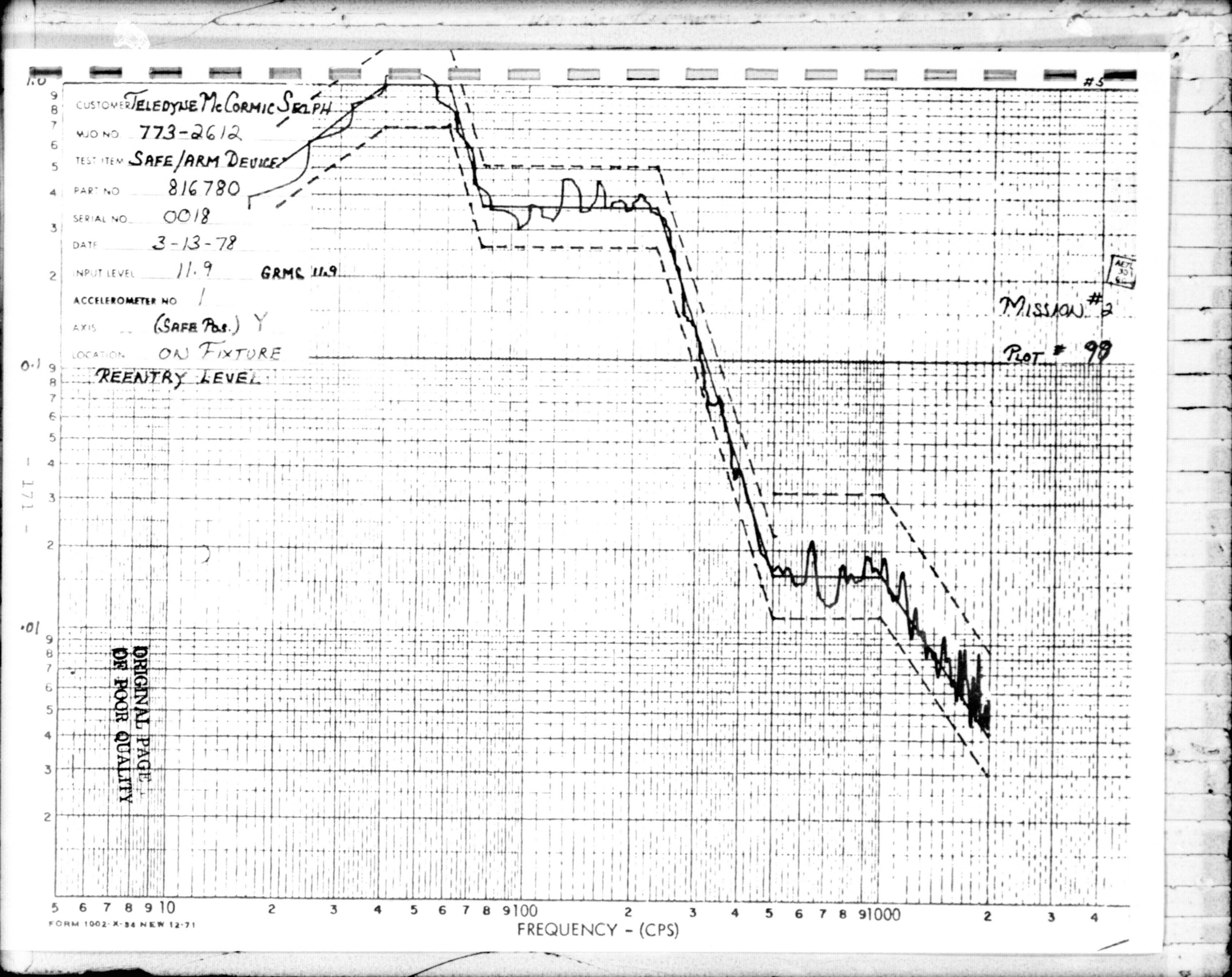
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CUSTOMER TELEDYNE McCORMIC SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0017
DATE 3-13-78
INPUT LEVEL 11.9 GRMS 11.9
ACCELEROMETER NO 1
AXIS Y (SAFE POS.) Y
LOCATION ON FIXTURE
REENTRY LEVEL
#5
MISSION #1
PLOT # 96
AETL 30 SEC
1.0
0.1
.01
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71
- 168 -



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CUSTOMER TELEDYNE McCORMIC SELPH
MJO NO 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO 0018
DATE 3-13-78
INPUT LEVEL 11.9 GRMS 11.9
ACCELEROMETER NO 1
AXIS (SAFE POS.) Y
LOCATION ON FIXTURE
REENTRY LEVEL
MISSION #1
PLOT # 98
#5
0.1
.01
- 170 -
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71



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CUSTOMER TELEDYNE McCORMIC SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0019

DATE 3-13-78

INPUT LEVEL 11.9 GRMS 11.9

ACCELEROMETER NO 1

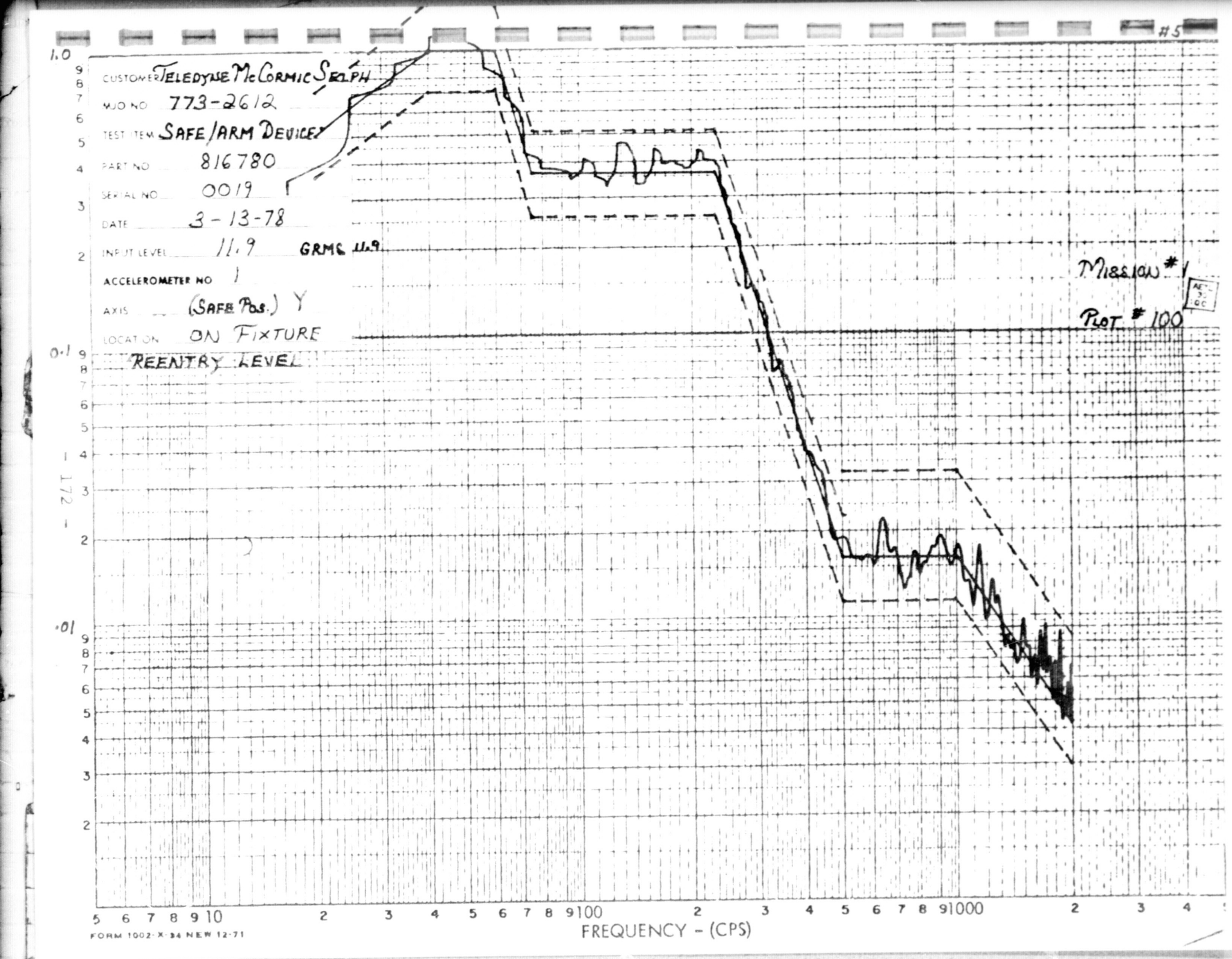
AXIS (SAFE POS.) Y

LOCATION ON FIXTURE

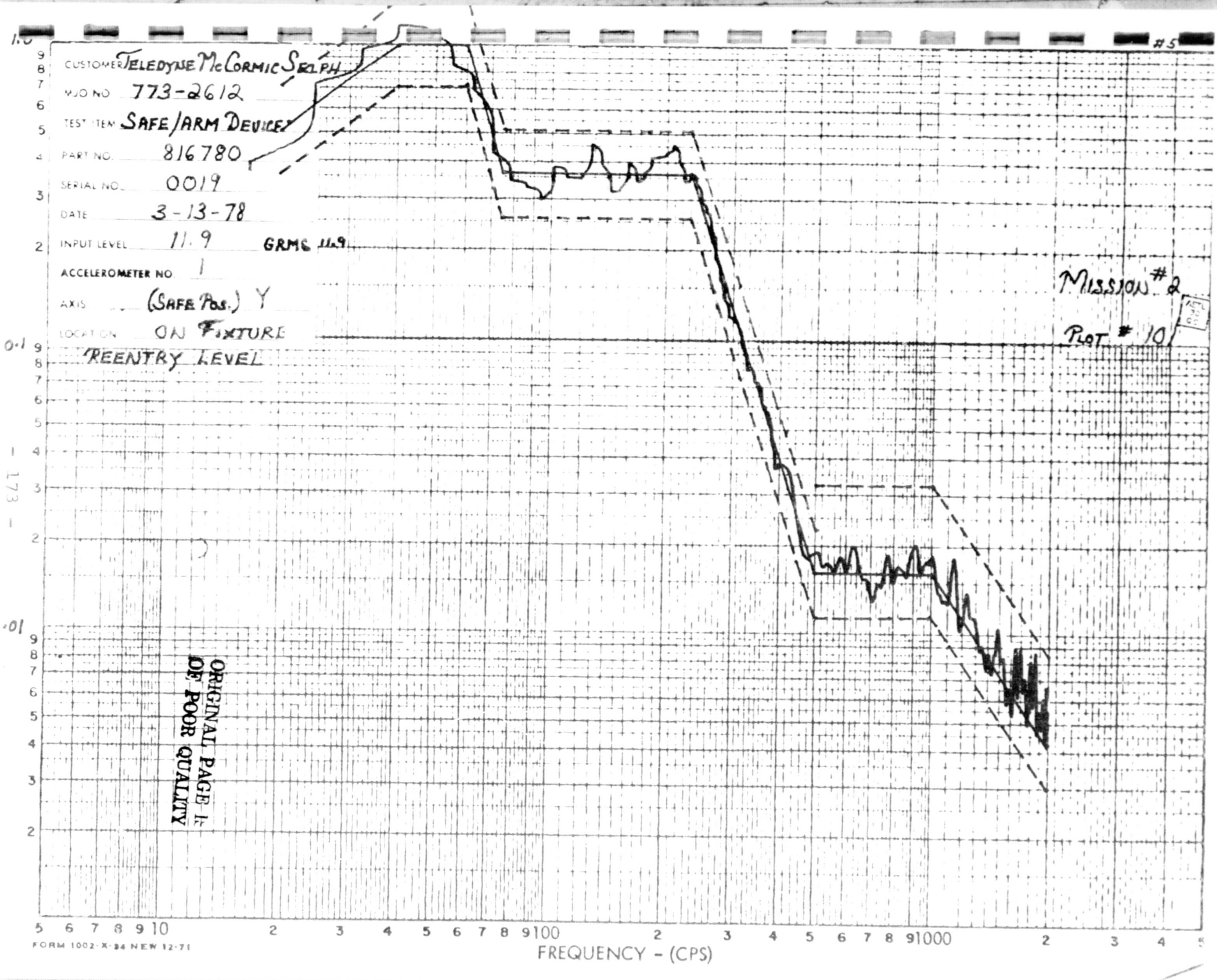
REENTRY LEVEL

MISSION #1

PLOT # 100



FORM 1002-X-34 NEW 12-71



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#5

CUSTOMER TELEDYNE McCORMIC SELPH

MJO NO 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO 816780

SERIAL NO 0019

DATE 3-13-78

INPUT LEVEL 11.9 GRMS 11.9

ACCELEROMETER NO 1

AXIS (SAFE Pos.) Y

LOCATION ON FIXTURE

REENTRY LEVEL

MISSION #3

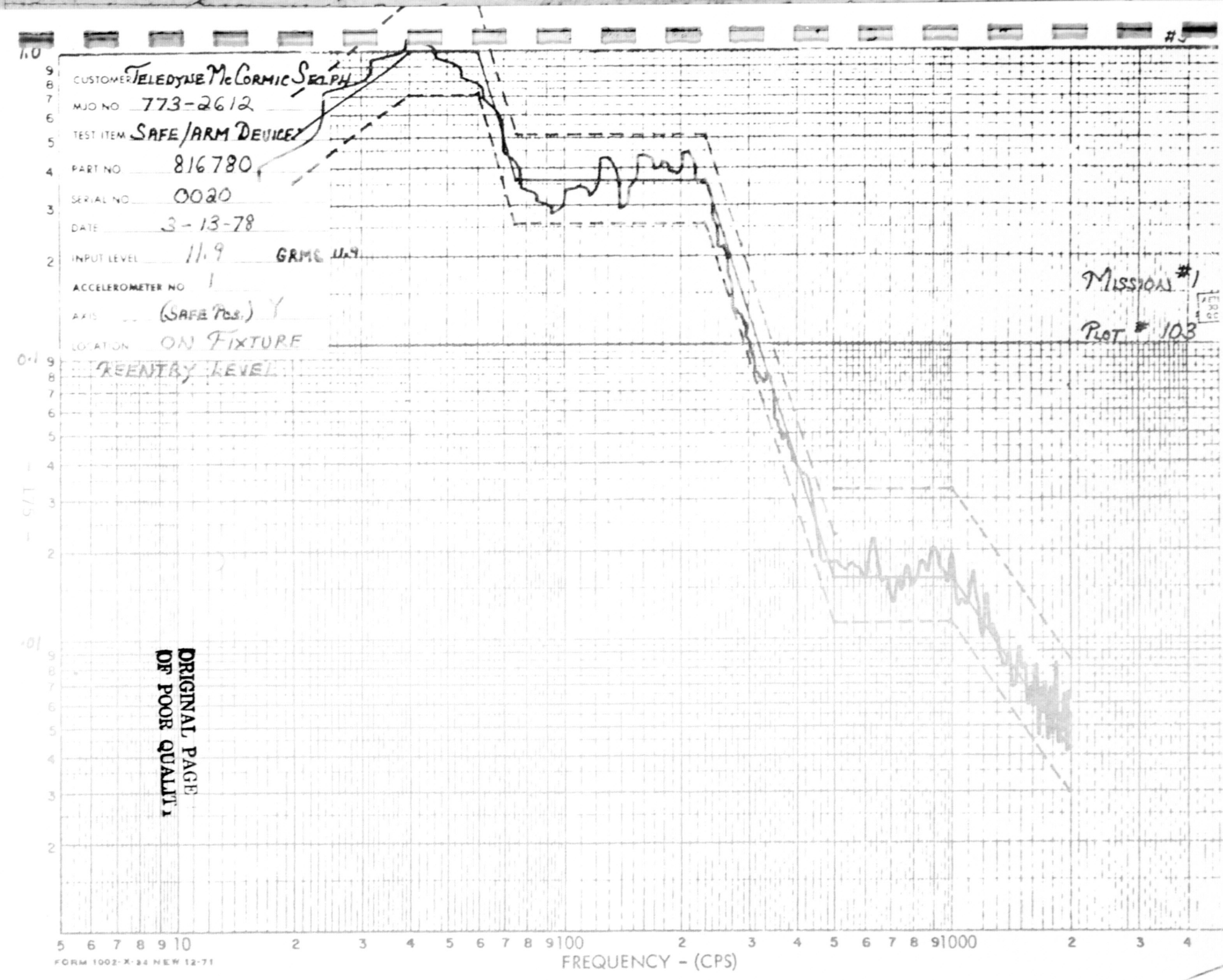
PLOT # 102

1.0
0.1
.01

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 91000 2 3 4 5

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71



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#3

CUSTOMER TELEDYNE McCORMIC SELPH

MJO NO. 773-2612

TEST ITEM SAFE/ARM DEVICE

PART NO. 816780

SERIAL NO. 0020

DATE 3-13-78

INPUT LEVEL 11.9 GRMS 11.9

ACCELEROMETER NO 1

AXIS (SAFE Pos.) Y

LOCATION ON FIXTURE

REENTRY LEVEL

MISSION #2

PLOT # 104

AFTL 30 QC

1.0

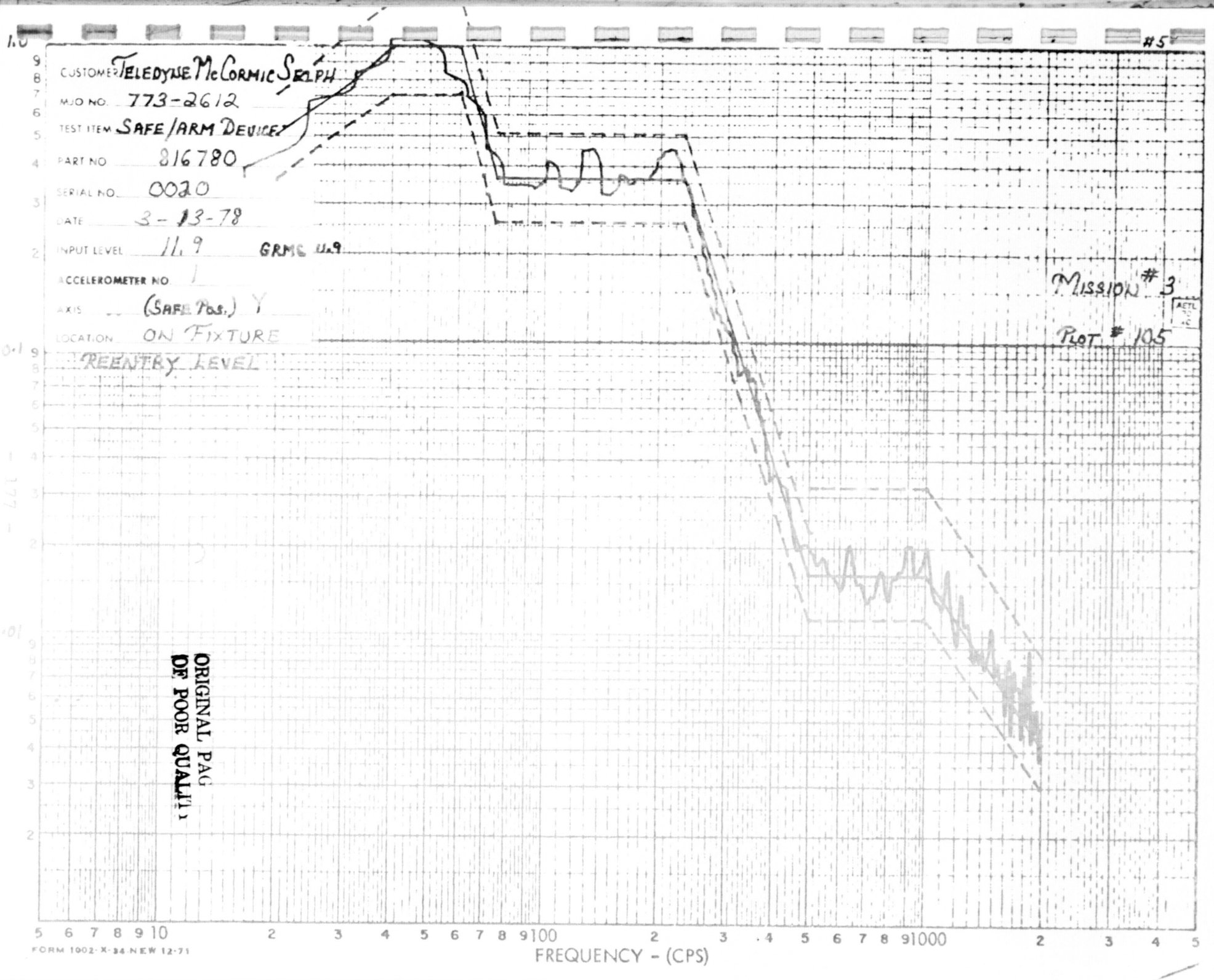
0.1

0.01

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-24 NEW 12-71


#5
CUSTOMER TELEDYNE McCORMIC SELPH
MJO NO. 773-2612
TEST ITEM SAFE/ARM DEVICE
PART NO 816780
SERIAL NO. 0020
DATE 3-13-78
INPUT LEVEL 11.9 GRMS 11.9
ACCELEROMETER NO. 1
AXIS (SAFE Pos.) Y
LOCATION ON FIXTURE
REENTRY LEVEL
MISSION # 3
PLOT # 105
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FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

#6

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/Arm Device

PART NO 816780

SERIAL NO. FIXTURE

DATE 3-14-78

INPUT LEVEL 12.2 GRMS

ACCELEROMETER NO 1

AXIS X+Z (Safe position)

LOCATION ON FIXTURE

Reentry level

EQUALIZATION

Plot # 106

10.0 g²

1.0 g²

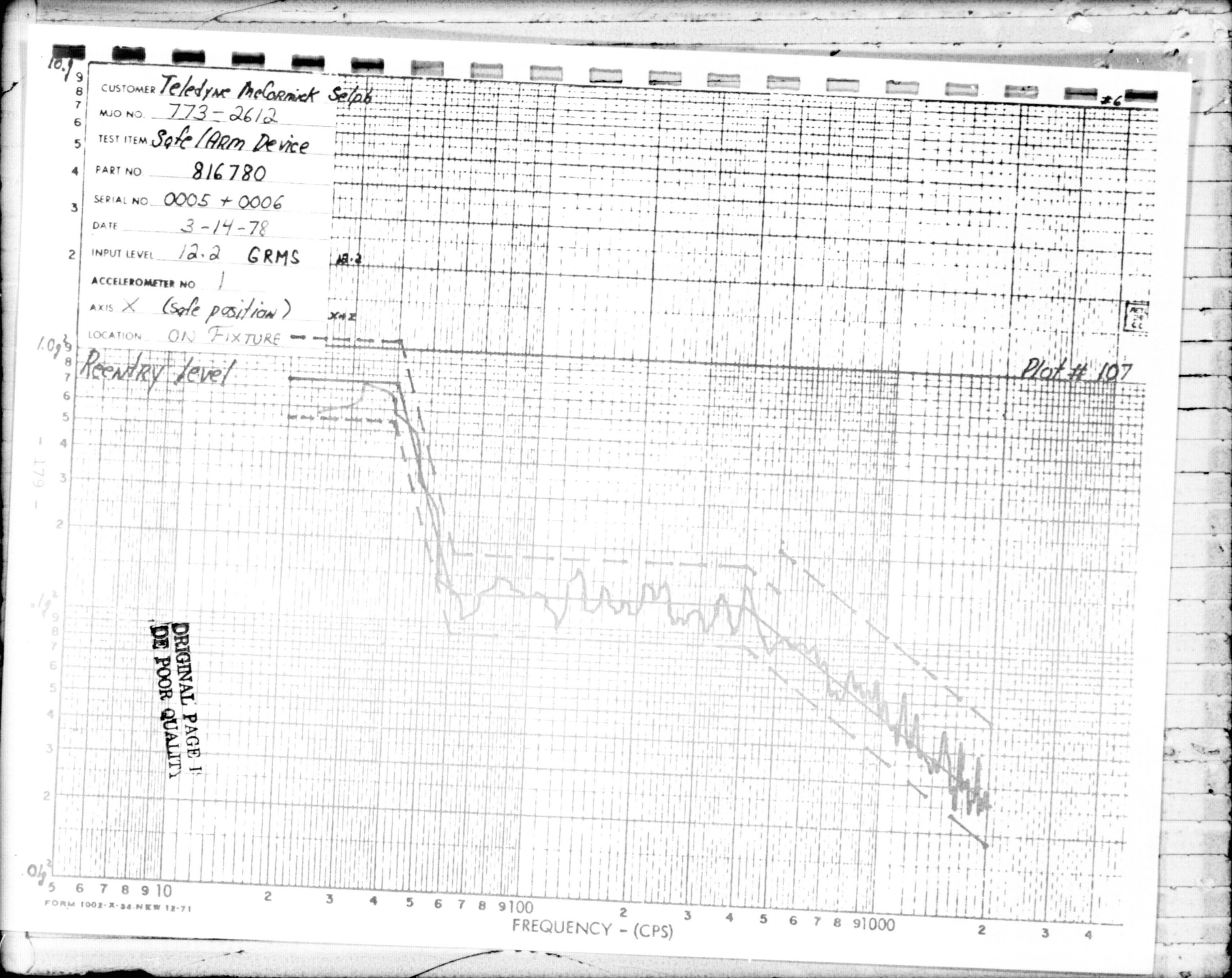
.1 g²

.01 g²

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71



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#6

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/Arm Device

PART NO. 816780

SERIAL NO. 0005 + 0006

DATE 3-14-78

INPUT LEVEL 22 GRMS

ACCELEROMETER NO 2

AXIS X (safe position)

LOCATION ON S/A DEVICE

Reentry level

Plot # 107B

10.0 g²/Hz

1.0 g²/Hz

.1 g²/Hz

.01 g²/Hz

12.2

X+Z

180 - 1

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/Arm Device

PART NO. 816780

SERIAL NO. 0005 + 0006

DATE 3-14-78

INPUT LEVEL 12.2 GRMS

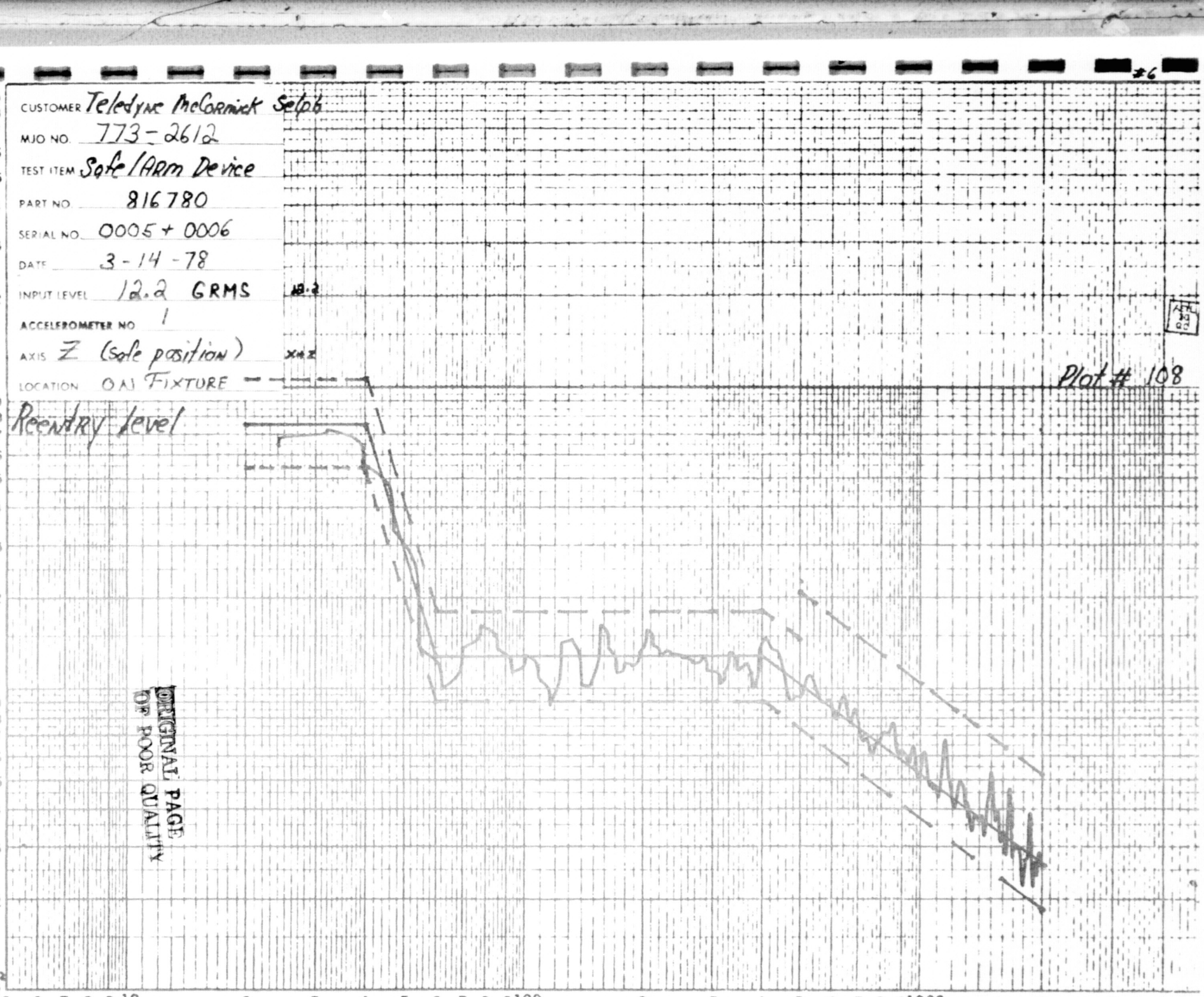
ACCELEROMETER NO 1

AXIS Z (safe position)

LOCATION OAJ FIXTURE

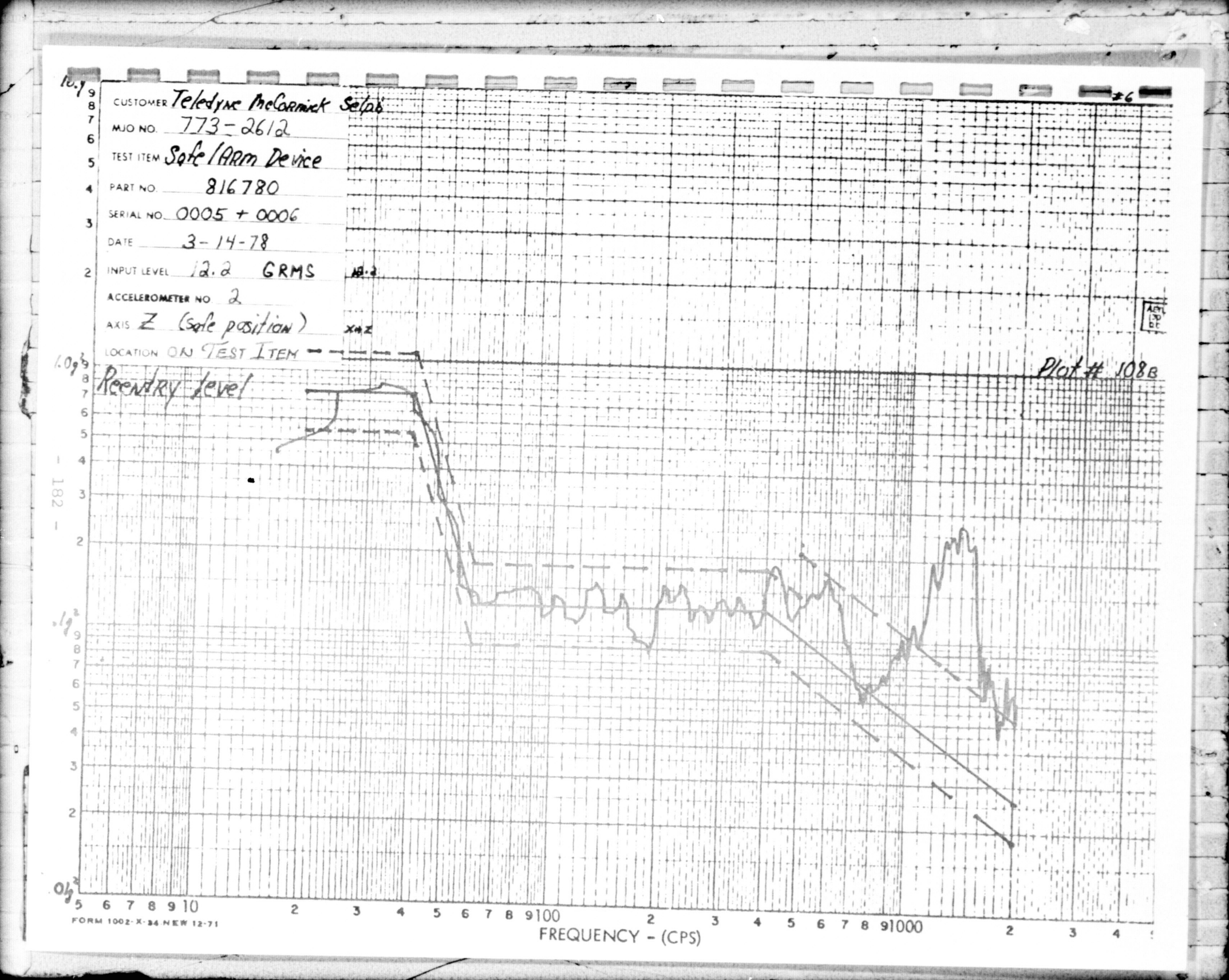
Plot # 108

Reentry level



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FORM 1002-X-34 NEW 12-71


CUSTOMER Teledyne McCormick Selph
MJO NO. 773-2612
TEST ITEM Safe/Arm Device
PART NO. 816780
SERIAL NO. 0005 + 0006
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO 2
AXIS Z (safe position)
LOCATION ON TEST ITEM
Reentry level
Plot # 108B
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/Arm Device

PART NO 816780

SERIAL NO 0008 + 0009

DATE 3-14-78

INPUT LEVEL 12.2 GRMS

ACCELEROMETER NO 1

AXIS Z (safe position)

LOCATION ON FIXTURE

Reentry level

12.2

X+Z

Plot # 109

ACT. 30-6

10.0 g²

1.0 g²

.1 g²

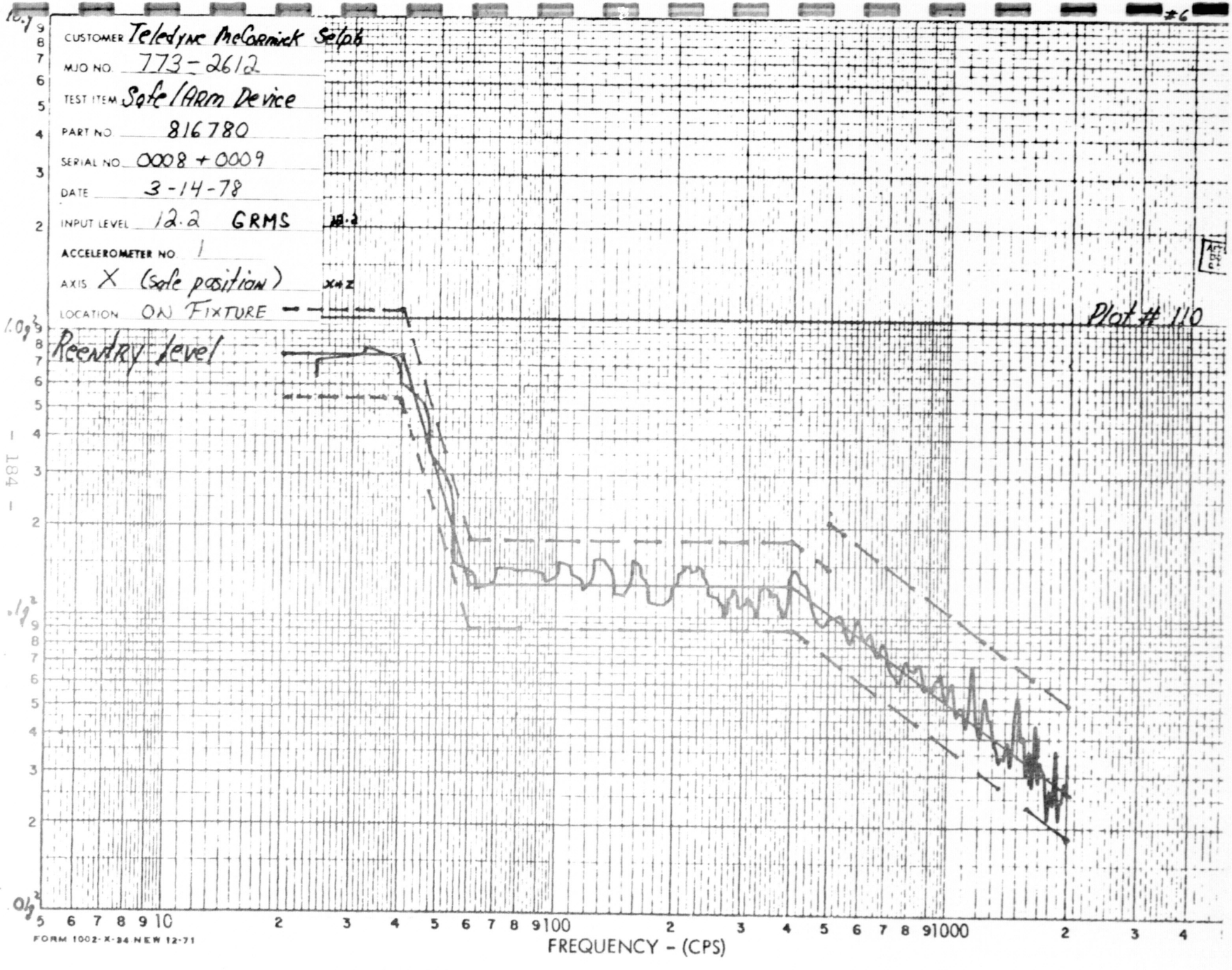
.01 g²

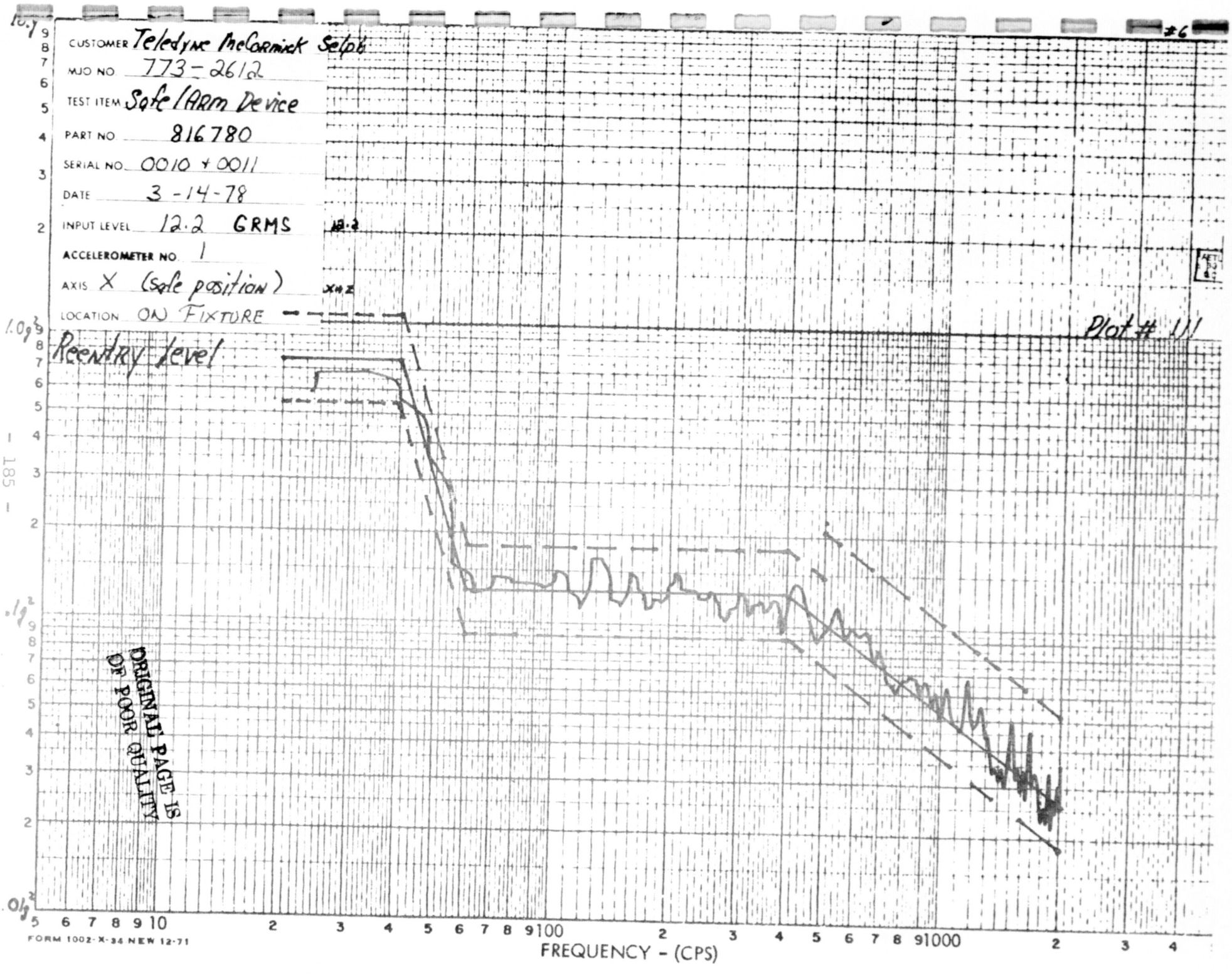
FREQUENCY - (CPS)

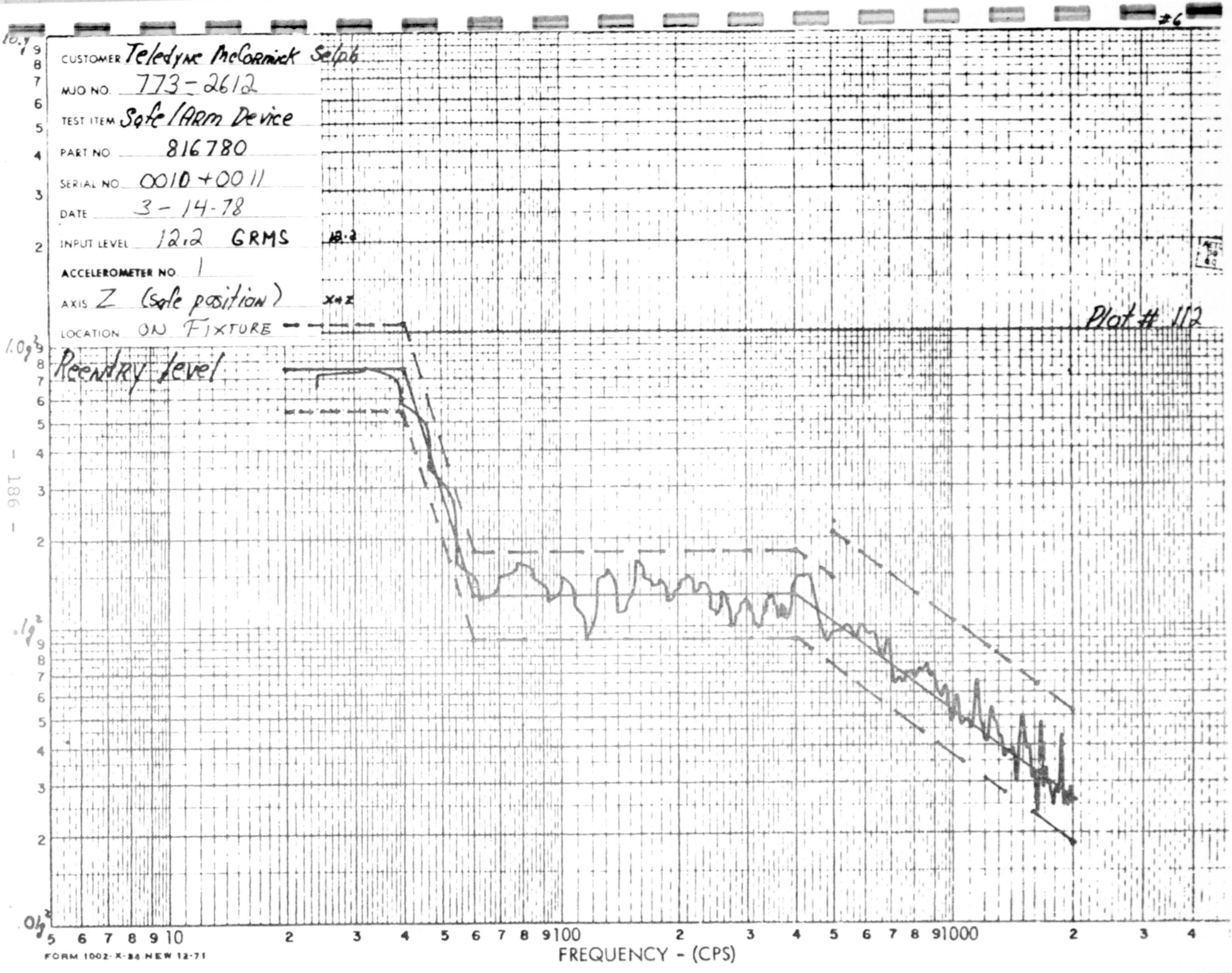
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

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OF POOR QUALITY

FORM 1002-X-84 NEW 12-71


CUSTOMER Teledyne McCormick Selph
MJO NO 773-2612
TEST ITEM Safe/ARM Device
PART NO 816780
SERIAL NO 0008 + 0009
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO 1
AXIS X (Safe position)
LOCATION ON FIXTURE
Reentry level
Plot # 110
#6
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71


CUSTOMER Teledyne McCormick Selph
MJO NO 773-2612
TEST ITEM Safe/ARM Device
PART NO 816780
SERIAL NO 0010 & 0011
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO 1
AXIS X (safe position)
LOCATION ON FIXTURE
Reentry level
Plot # 11
#6
12.2
X+Z
1.0g²/Hz
.1g²/Hz
.01g²/Hz
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71
ORIGINAL PAGE IS OF POOR QUALITY


CUSTOMER Teledyne McCormick Selph
MJO NO. 773-2612
TEST ITEM Safe/Arm Device
PART NO 816780
SERIAL NO 0010 + 0011
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO 1
AXIS Z (safe position)
LOCATION ON FIXTURE
Reentry level
Plot # 112
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/Arm Device

PART NO 816780

SERIAL NO. 0012 + 0013

DATE 3-14-78

INPUT LEVEL 12.2 GRMS

ACCELEROMETER NO. 1

AXIS Z (safe position)

LOCATION ON FIXTURE

Reentry level

Plot # 113

X+Z

+6

+8.2

1.0 g^2

.1 g^2

.01 g^2

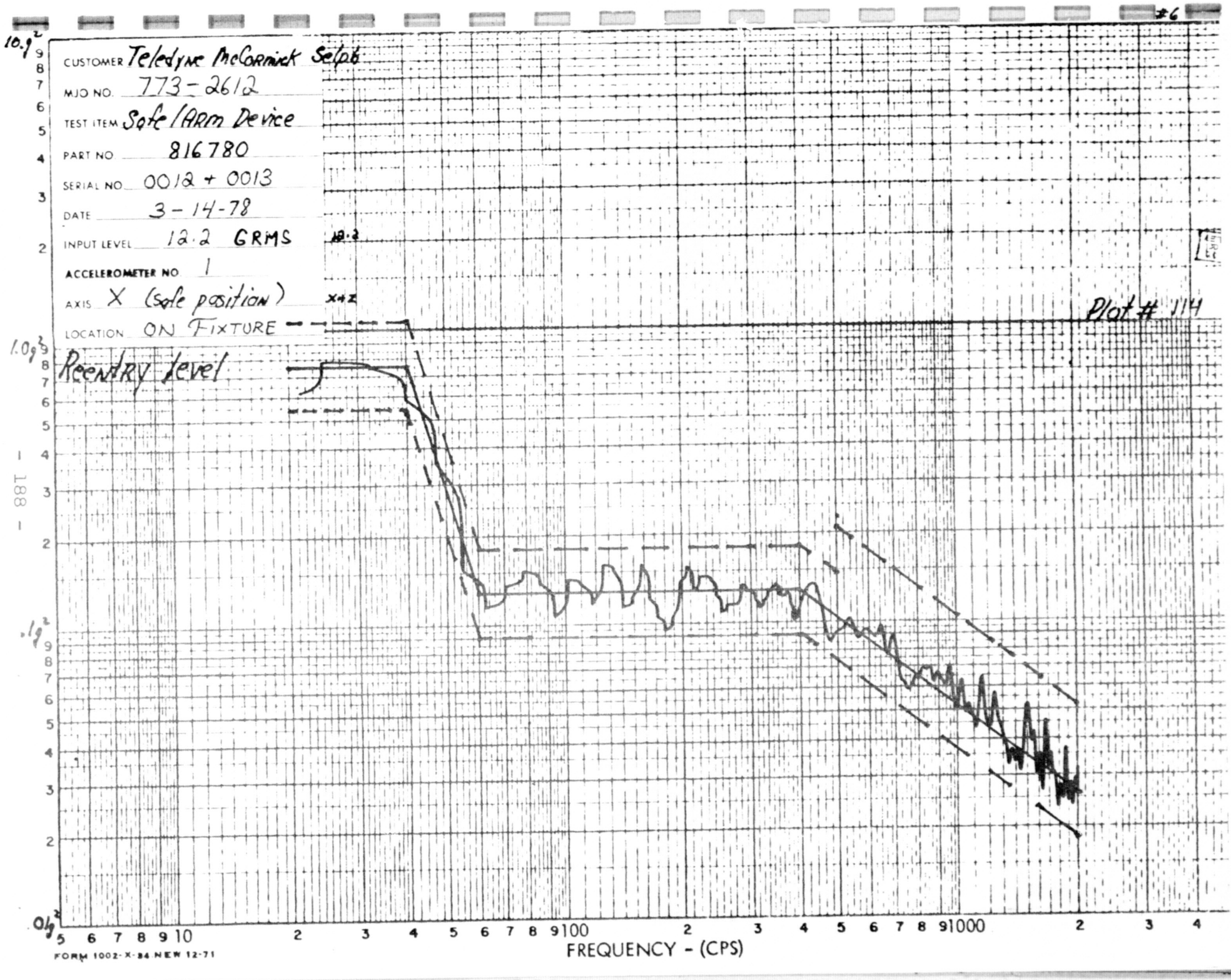
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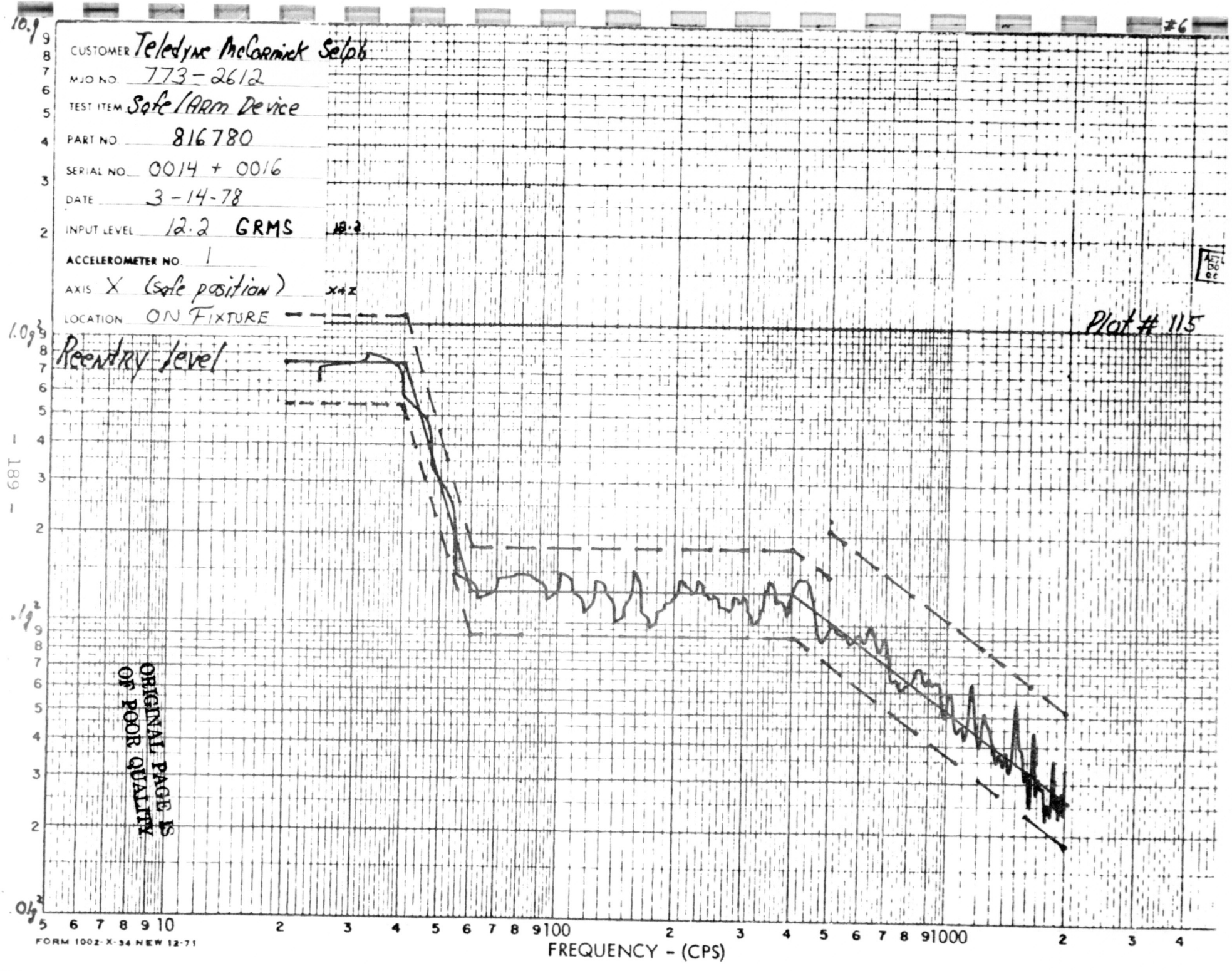
FREQUENCY - (CPS)

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4 5

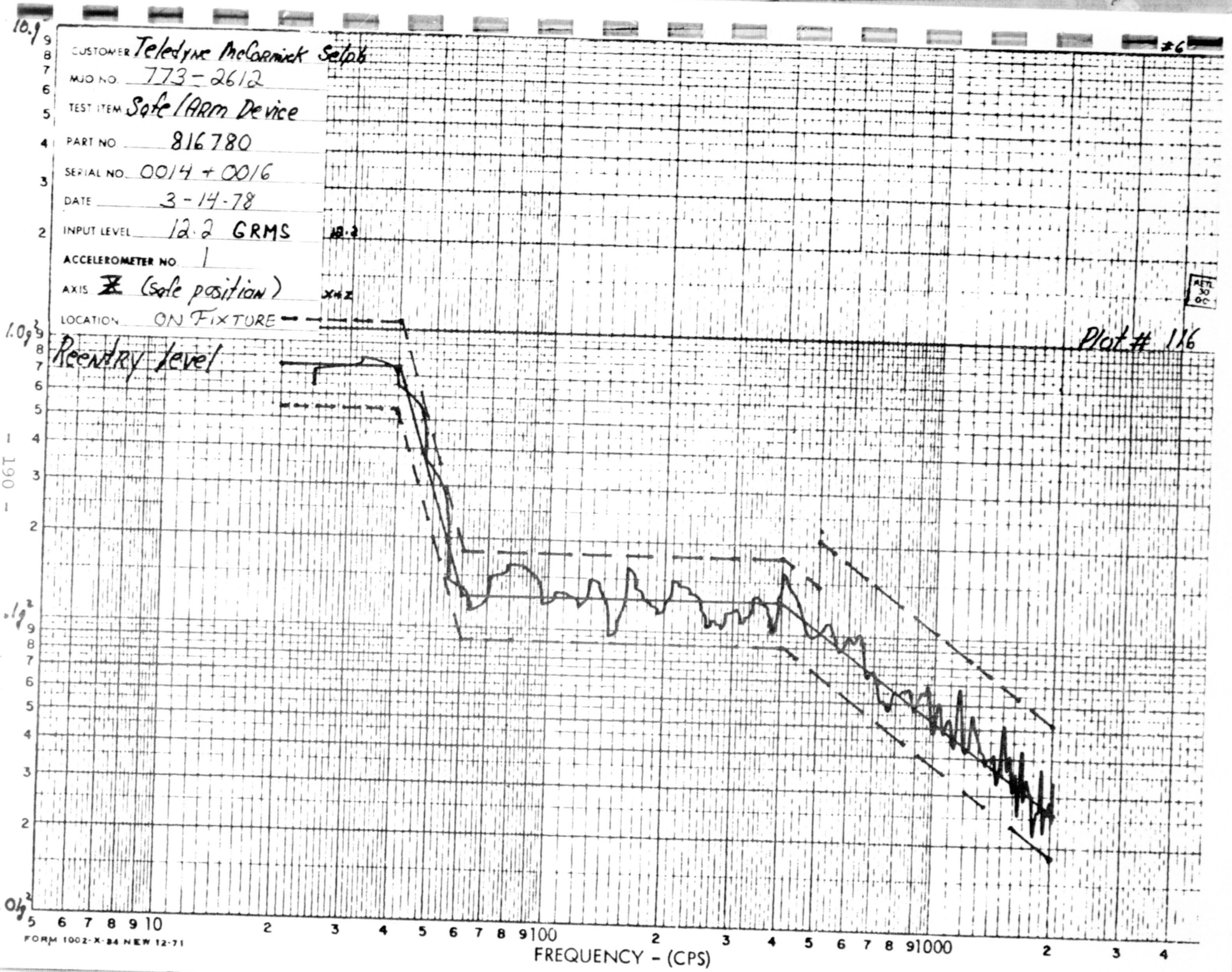
FORM 1002-X-34 NEW 12-71

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#6
CUSTOMER Teledyne McCormick Selph
MJO NO. 773-2612
TEST ITEM Safe/ARM Device
PART NO. 816780
SERIAL NO. 0012 + 0013
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO. 1
AXIS X (safe position)
LOCATION ON FIXTURE
Reentry level
Plot # 1114
10.0 g²
1.0 g²
.1 g²
.01 g²
12.2
X+Z
5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71



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CUSTOMER Teledyne McCormick Selph
MJD NO. 773-2612
TEST ITEM Safe/ARM Device
PART NO 816780
SERIAL NO. 0014 + 0016
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO. 1
AXIS Z (safe position)
LOCATION ON FIXTURE
Reentry level
Plot # 116
10.0 g²
1.0 g²
.1 g²
.01 g²
12.2
X+Z
REF. 30 OCT
FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71

#6

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/ARM Device

PART NO 816780

SERIAL NO. 0017 + 0018

DATE 3-14-78

INPUT LEVEL 12.2 GRMS

ACCELEROMETER NO. 1

AXIS Z (safe position)

LOCATION ON FIXTURE

Reentry level

12.2

X+Z

Mission #1

Plot # 117

1.0 g²

.1 g²

.01 g²

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

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#6

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/ARM Device

PART NO. 816780

SERIAL NO. 0017 + 0018

DATE 3-14-78

INPUT LEVEL 12.2 GRMS

ACCELEROMETER NO. 1

AXIS Z (safe position)

LOCATION ON FIXTURE

Reentry level

MISSION #2

Plot # 118

10.0 g²
1.0 g²
.1 g²
.01 g²

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71

#6

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/Arm Device

PART NO. 816780

SERIAL NO. 0017+0018

DATE 3-14-78

INPUT LEVEL 12.2 GRMS

ACCELEROMETER NO. 1

AXIS X (safe position)

LOCATION ON FIXTURE

Reentry level

12.2

X AXIS

Mission #1

Plot # 119

10.0 g²

1.0 g²

.1 g²

.01 g²

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-34 NEW 12-71

ORIGINAL PAGE IS OF POOR QUALITY

#6

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/ARM Device

PART NO. 816780

SERIAL NO. 0017 + 0018

DATE 3-14-78

INPUT LEVEL 12.2 GRMS 12.2

ACCELEROMETER NO. 1

AXIS X (safe position) X+Z

LOCATION ON FIXTURE

Mission #2

Plot # 120

Reentry level

10.0 g²

1.0 g²

.1 g²

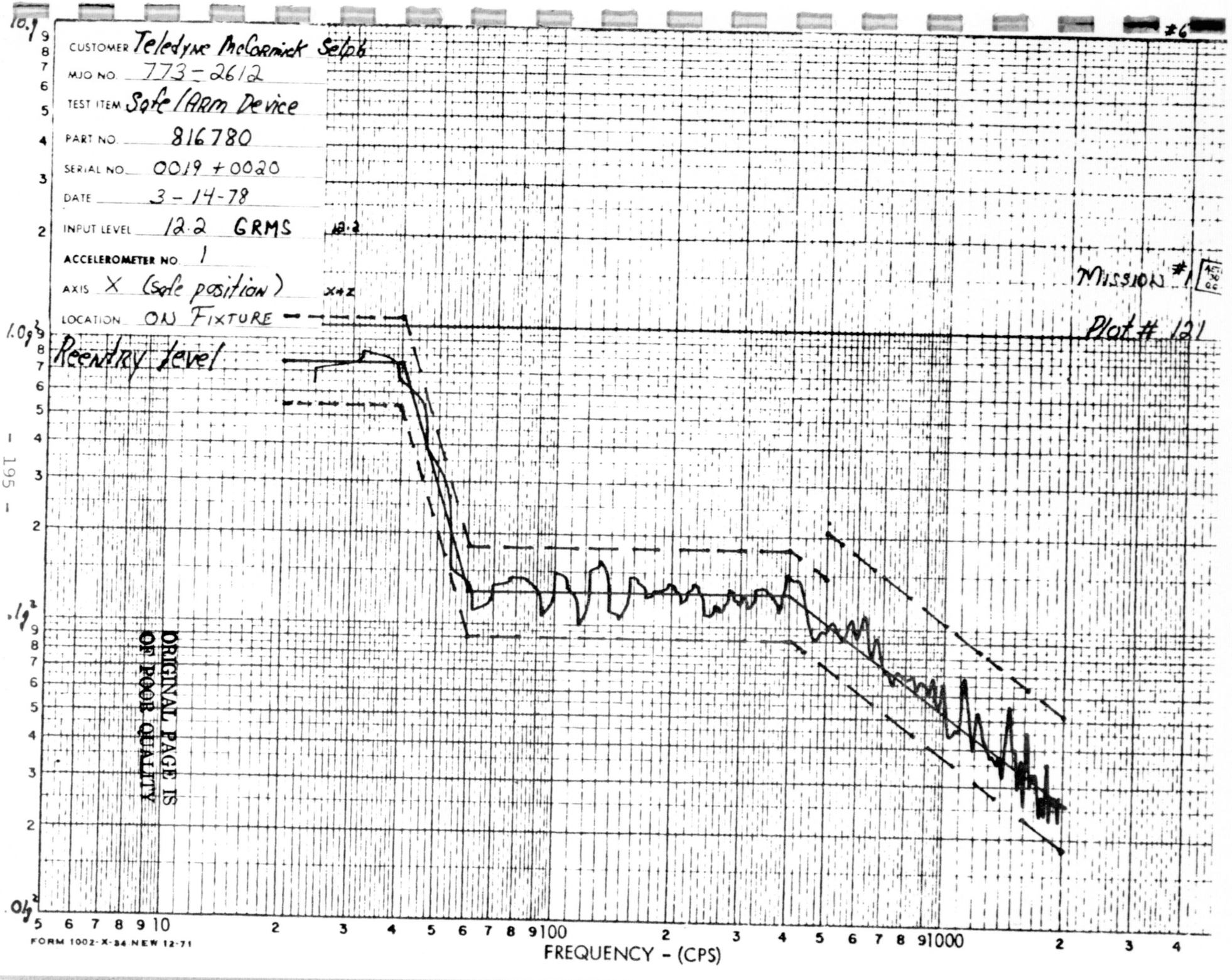
.01 g²

- 194 -

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84 NEW 12-71



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#6

CUSTOMER Teledyne McCormick Selph
MJO NO. 773-2612
TEST ITEM Safe/ARM Device
PART NO. 816780
SERIAL NO. 0019 + 0020
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO. 1
AXIS X (safe position)
LOCATION ON FIXTURE

Reentry level

MISSION #2

Plot # 122

10.0 g²
1.0 g²
.1 g²
.01 g²

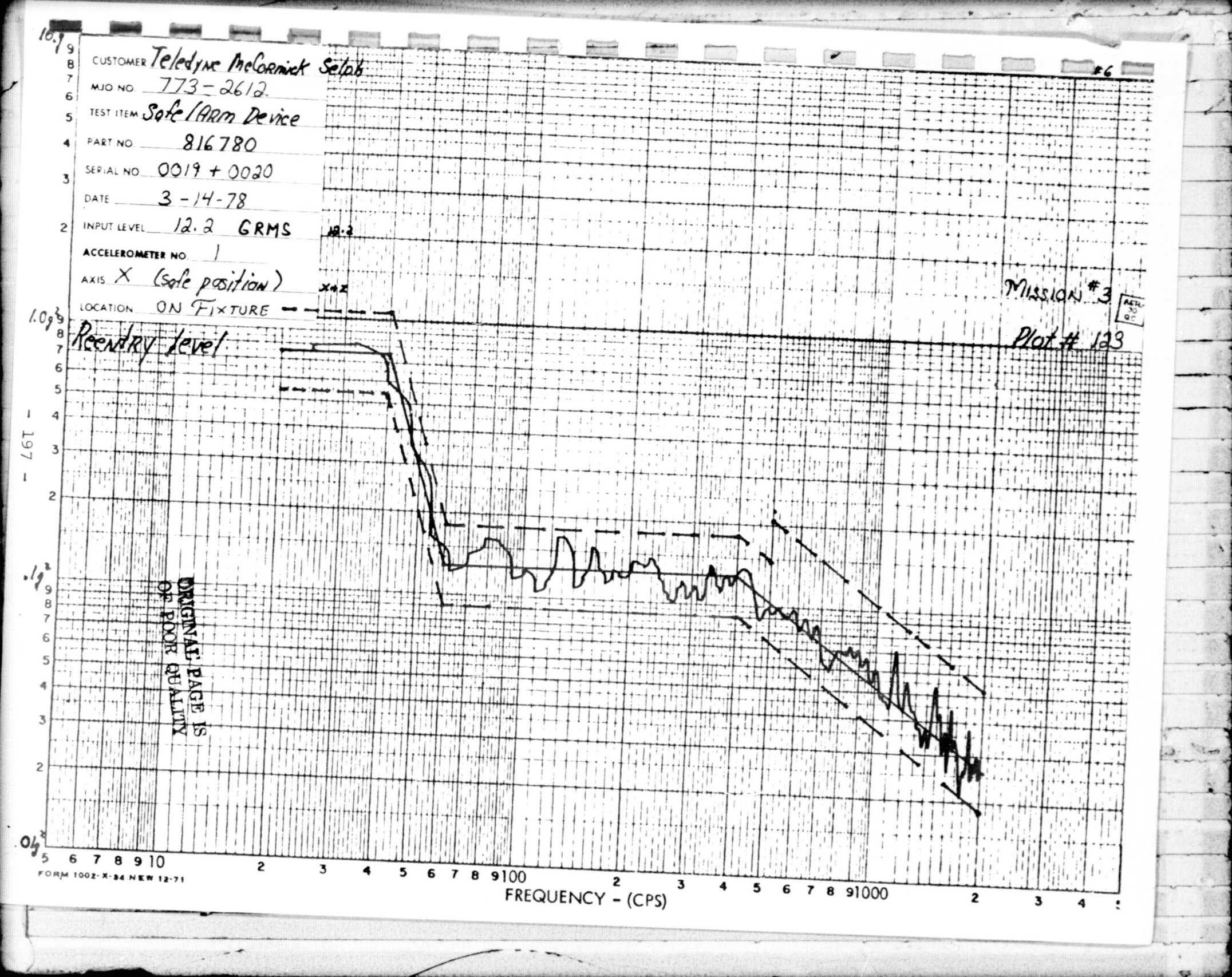
12.2

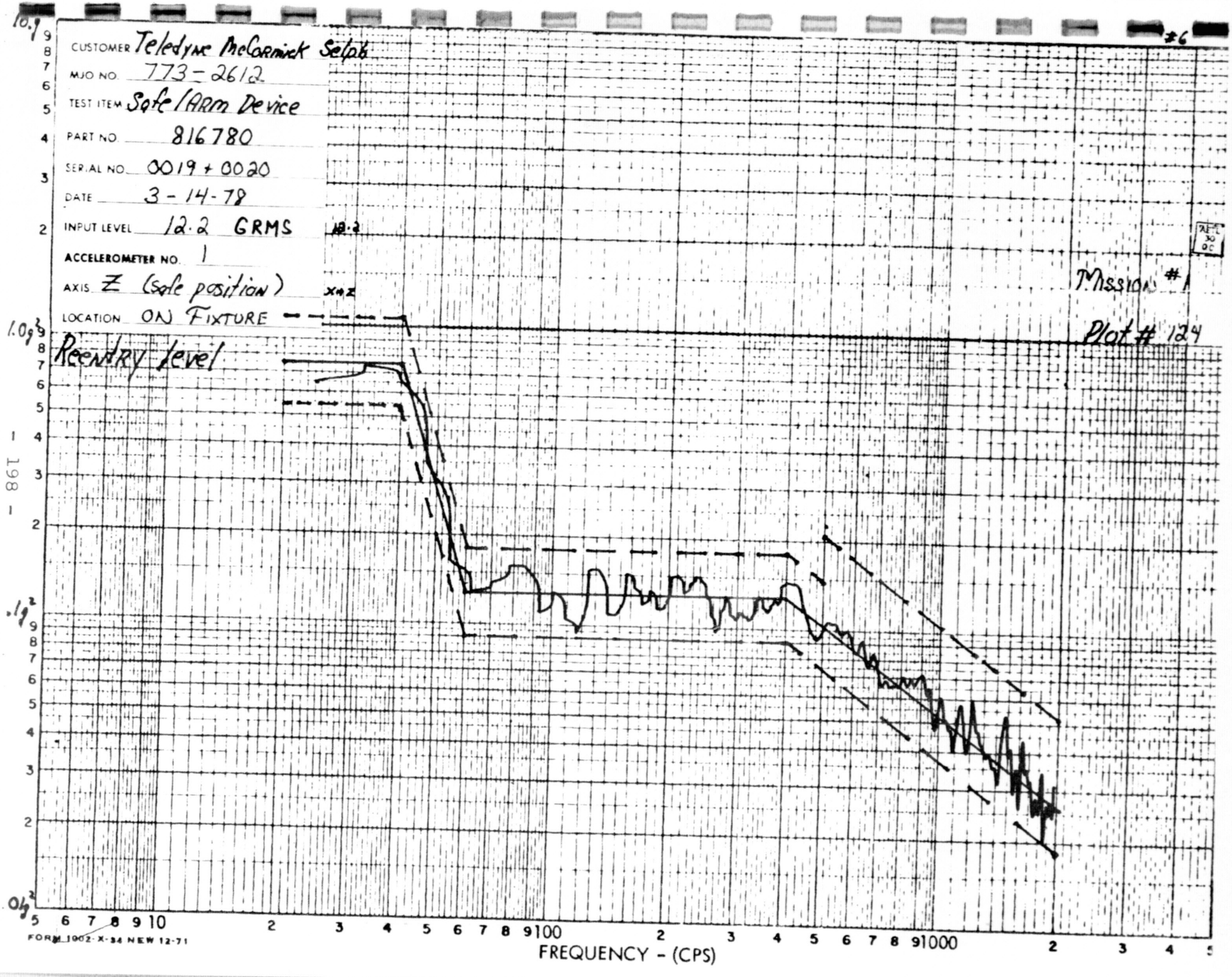
x or z

5 6 7 8 9 10 2 3 4 5 6 7 8 9 100 2 3 4 5 6 7 8 9 1000 2 3 4

FREQUENCY - (CPS)

FORM 1002-X-84-NEW 12-71


CUSTOMER Teledyne McCormick Selph
MJO NO 773-2612
TEST ITEM Safe/ARM Device
PART NO 816780
SERIAL NO 0019 + 0020
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO 1
AXIS X (safe position)
LOCATION ON FIXTURE
12.2
X+Z
Reentry level
Mission #3
Plot # 123
#6
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FREQUENCY - (CPS)
FORM 1002-X-84 NEW 12-71
- 197 -


CUSTOMER Teledyne McCormick Selph
MJO NO. 773-2612
TEST ITEM Safe/ARM Device
PART NO. 816780
SERIAL NO. 0019 + 0020
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO. 1
AXIS Z (safe position)
LOCATION ON FIXTURE
Reentry level
Mission #1
Plot # 124
#6
12.2
X+Z
10.0
1.0
.1
.01
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

CUSTOMER Teledyne McCormick Selph

MJO NO. 773-2612

TEST ITEM Safe/Arm Device

PART NO. 816780

SERIAL NO. 0019 + 0020

DATE 3-14-78

INPUT LEVEL 12.2 GRMS

ACCELEROMETER NO. 1

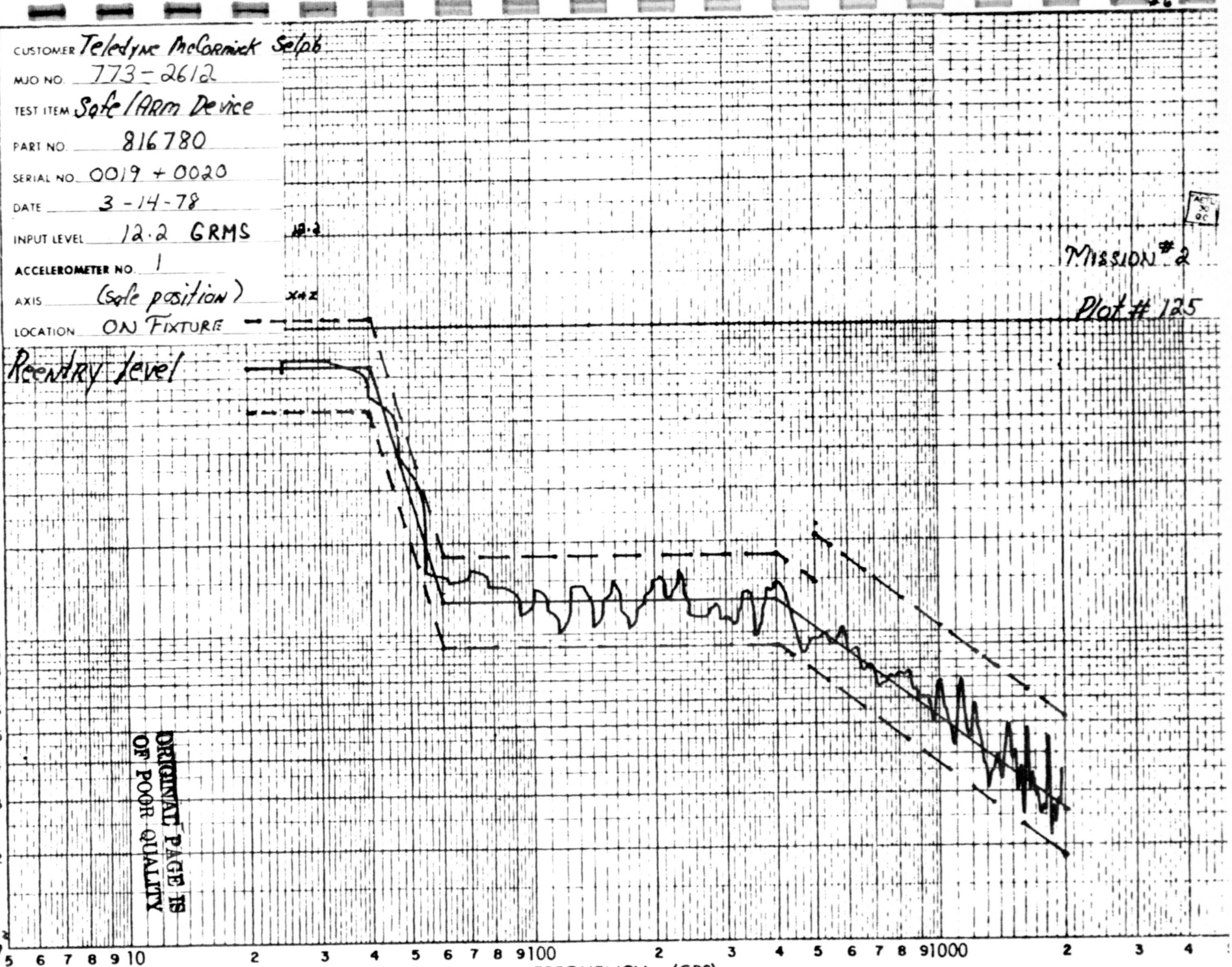
AXIS (safe position)

LOCATION ON FIXTURE

Reentry level

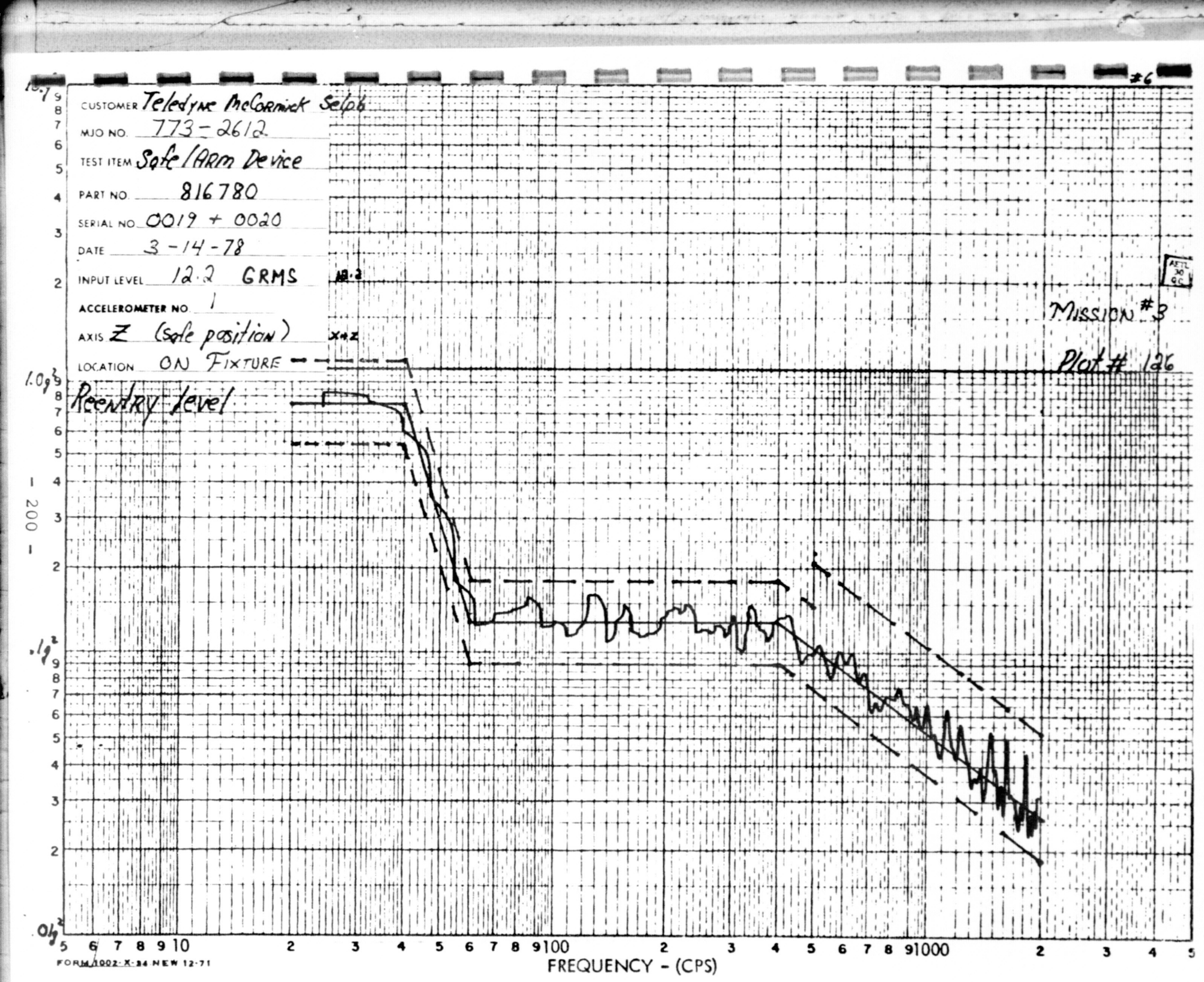
MISSION #2

Plot # 125



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FORM 1002-X-84 NEW 12-71


#6
CUSTOMER Teledyne McCormick Selph
MJO NO. 773-2612
TEST ITEM Safe/ARM Device
PART NO. 816780
SERIAL NO. 0019 + 0020
DATE 3-14-78
INPUT LEVEL 12.2 GRMS
ACCELEROMETER NO. 1
AXIS Z (safe position)
LOCATION ON FIXTURE
Reentry level
Mission #3
Plot # 126
FREQUENCY - (CPS)
FORM 1002-X-34 NEW 12-71

Date Started: 3-14-78	TEST DATA		Performed By: G.W. CAYER Q.A.
Date Completed: 3-15-78	Specimen Description: 816780 SAFETY AND ARMING DEVICE	Test: SHOCK SPECTRA	
Temp: AMB / Humidity: —	Customer: TELEDYNE McCORMICK SELPH	Test Spec. QTP 816780 REV 'A', PARA. 5.5	J/N 773-2612

Date	Time	Analyzed Primary Pulse +	Analyzed Primary Pulse −	Analyzed Maxi-Max	Number of Pulses	Axis	Discontinuities	"Q" Factor = 1/(2 × % Damping)	Plot No.	Sample Serial No.	Comment
Day	Hour		Noted	Noted	Noted							Specified
3-14-78	1525		—	—	✓	N/A	X,Y,Z	NONE	10	1		FIXTURE	EQUALIZATION
	1538		—	—	✓	2	Z	NONE	10	2		0014/0016	MISSION #1
	1545		—	—	✓	2	X	NONE	10	3		0014/0016	MISSION #1
	1548		—	—	✓	2	Y	NONE	10	4		0016	MISSION #1
	1552		—	—	✓	2	Y	NONE	10	5		0014	MISSION #1
	1556		—	—	✓	2	Y	NONE	10	6		0017	MISSION #1
	1557		—	—	✓	10	Y	NONE	10	7		0017	MISSION #2-6
	1603		—	—	✓	2	Y	NONE	10	8		0018	MISSION #1
	1605		—	—	✓	10	Y	NONE	10	9		0018	MISSION #2-6
	1615		—	—	✓	2	X	NONE	10	10		0017/0018	MISSION #1
	1616		—	—	✓	10	X	NONE	10	11		0017/0018	MISSION #2-6
	1619		—	—	✓	2	Z	NONE	10	12		0017/0018	MISSION #1
	1621		—	—	✓	10	Z	NONE	10	13		0017/0018	MISSION #2-6
	1630		—	—	✓	2	Z	NONE	10	14		0019	MISSION #1
	1633		—	—	✓	10	Z	NONE	10	15		0019	MISSION #2-6
3-14-78	1635		—	—	✓	8	Z	NONE	10	16		0019	MISSION #7-10
3-15-78	0845		—	—	✓	N/A	X,Y,Z	NONE	10	17		FIXTURE	EQUALIZATION
	0850		—	—	✓	2	X	NONE	10	18		0019	MISSION #1
3-15-78	0852		—	—	✓	10	X	NONE	10	19		0019	MISSION #2-6

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Date Started: 3-14-78	TEST DATA		Performed By: G. W. CAYER
Date Completed: 3-15-78	Specimen Description: 816780 SAFETY AND ARMING DEVICE	Test: SHOCK SPECTRA	Q.A. AETL 30 QC
Temp: AMB / Humidity: —	Customer: TELEDYNE Mc CORMICK SELPH	Test Spec. QTP 816780 REV. 'A', PARA. 5.5	J/N 773-2612

Date	Time	Analyzed Primary Pulse +	Analyzed Primary Pulse −	Analyzed Maxi-Max	Number of Pulses	Axis	Discontinuities	"Q" Factor = 1 / 2% Damping	Plot No.	Sample Serial No.	Comment
											Specified
Day	Hour		Noted	Noted	Noted	Noted					
3-15-78	0855		—	—	✓	8	X	NONE	10	20	0019	MISSION #7-10
	0912		—	—	✓	2	Y	NONE	10	21	0020	MISSION #1
			NOTE: S/N 0020 WOULD NOT CYCLE AFTER MISSION #1 IN Y AXIS									
	0920		—	—	✓	2	Y	NONE	10	22	0019	MISSION #1
	0922		—	—	✓	10	Y	NONE	10	23	0019	MISSION #2-6
3-15-78	0926		—	—	✓	8	Y	NONE	10	24	0019	MISSION #7-10

NOTE: THE S+A DEVICES WERE IN THE SAFE POSITION AND SWITCH POSITION MONITORED DURING EACH SHOCK PULSE. AFTER EACH AXIS OF SHOCK THE S+A DEVICE WAS CYCLED FROM SAFE TO ARMED TO SAFE, AND THE ELAPSED TIME FOR 90° ROTATION PLUS ACTUATION CURRENT WAS MONITORED WITH CUSTOMER SUPPLIED TEST EQUIPMENT.

NOTICE OF DEVIATION

AETL

APPROVED ENGINEERING TEST LABORATORIES

DATE: 3-15-78

- ☐ LOS ANGELES DIVISION / 5320 WEST 104TH STREET / LOS ANGELES, CALIFORNIA 90045 / (213) 776-3202
- ☐ VALLEY DIVISION / 9551 CANOGA AVENUE / CHATSWORTH, CALIFORNIA 91311 / (213) 341-0830
- ☐ SAUGUS DIVISION / 20988 W. GOLDEN TRIANGLE RD. / SAUGUS, CALIFORNIA 91350 / (805) 259-8184
- ☐ SOUTH EL MONTE DIVISION / 1432 POTRERO AVENUE / SO. EL MONTE, CALIF. 91733 / (213) 444-9511
- ☒ FULLERTON DIVISION / 1536 EAST VALENCIA / FULLERTON, CALIFORNIA 92631 / (714) 879-6110

CUSTOMER: TELEDYNE McCORMICK SELPH MJO NO.: 773-262

PART NO.: 816780 N.O.D. NO.: 1

SERIAL NO.: 0020 (UNIT #14) P.O. NO.: 96064 RR

TEST PROCEDURE: QTP 816780 PARAGRAPH: 5.5

REQUIREMENT: Test item shall function as specified at the conclusion of the testing.

DEVIATION: S/N 0020 failed to function normally at the conclusion of the shock test.

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DISPOSITION: Remove S/N 0020 from the test, continue testing the remaining test items

AETL 30 RC

APPROVAL H. Kone
(Customer Representative)

CUSTOMER NOTIFICATION:

Made to: Harry Kone How: Verbal

Date & Time: 1100 3-15-78 By: Geo. Cooper

DCAS Notified: ☐ YES ☐ NO 3-15-78 DATE G. Mattson A.E.T.L. Dept. Supervisor

A&B PTG — 231

APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 1

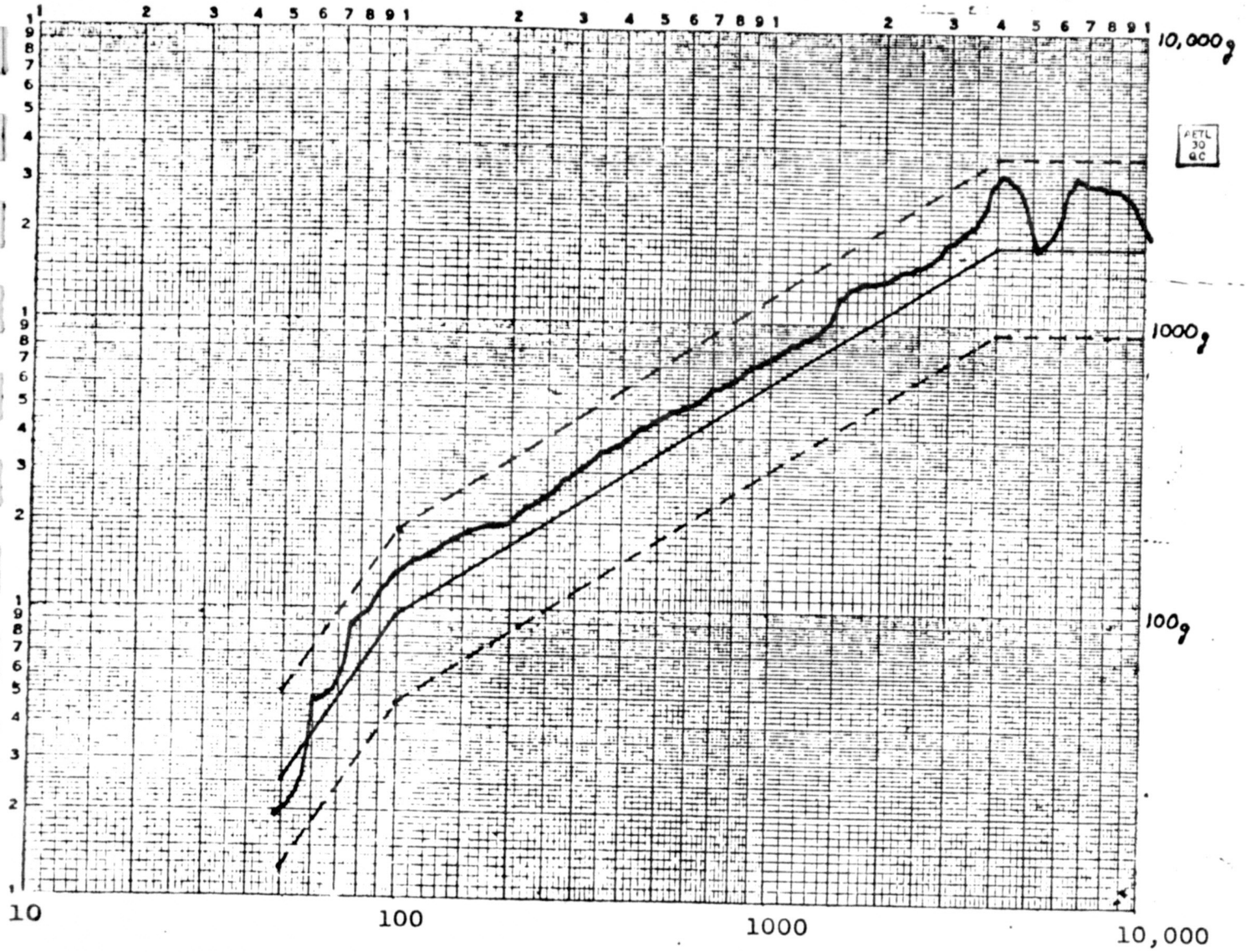
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

SPECIMEN S/N FIXTURE P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS X,Y,Z FULL SCALE 10,000g PK

EQUALIZATION
SHOCK SPECTRUM



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APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 2

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

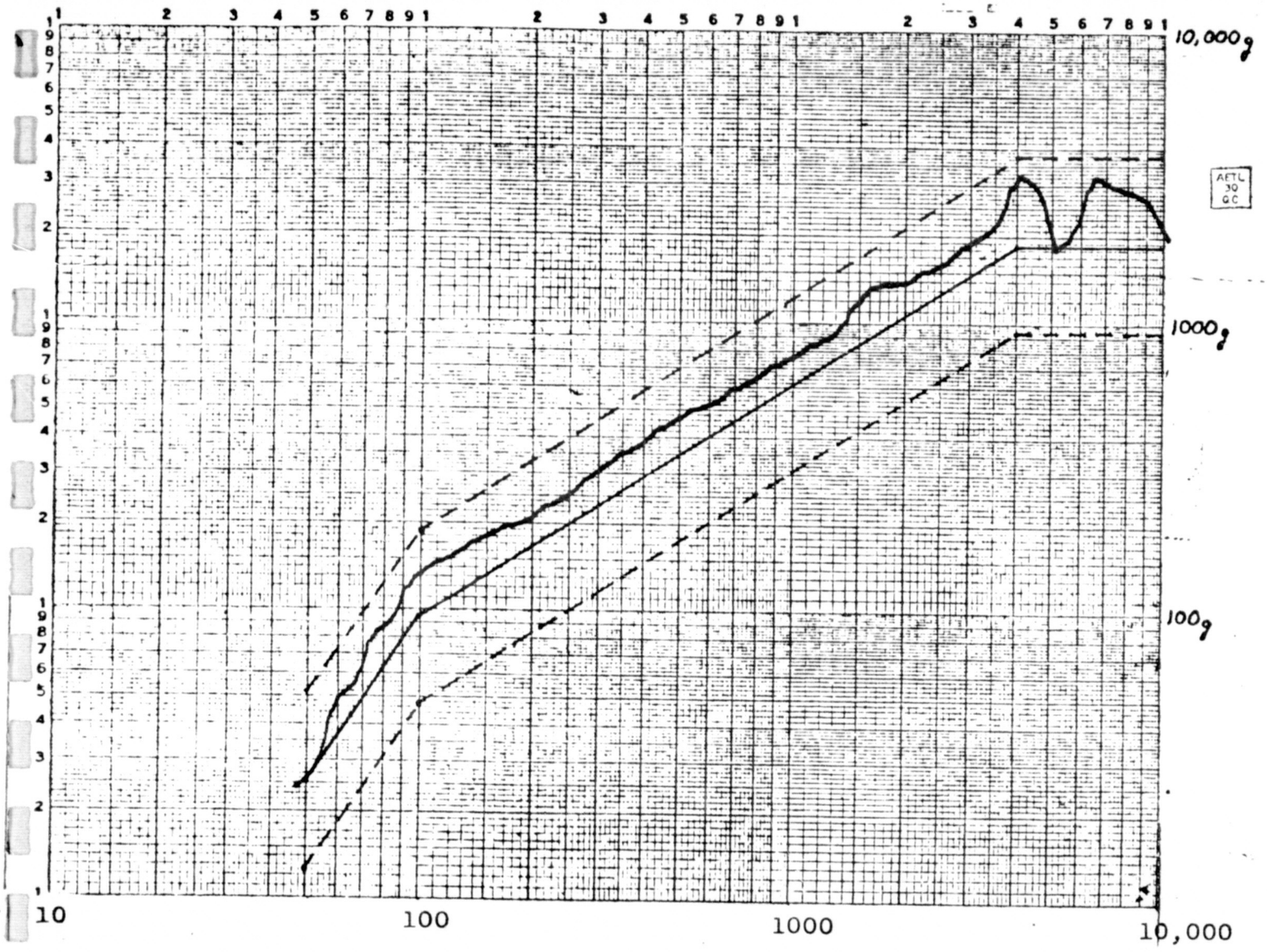
SPECIMEN S/N 0014 + 0016 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Z FULL SCALE 10,000g PK

MISSION #1

SHOCK SPECTRUM



FREQUENCY Hz

APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 3

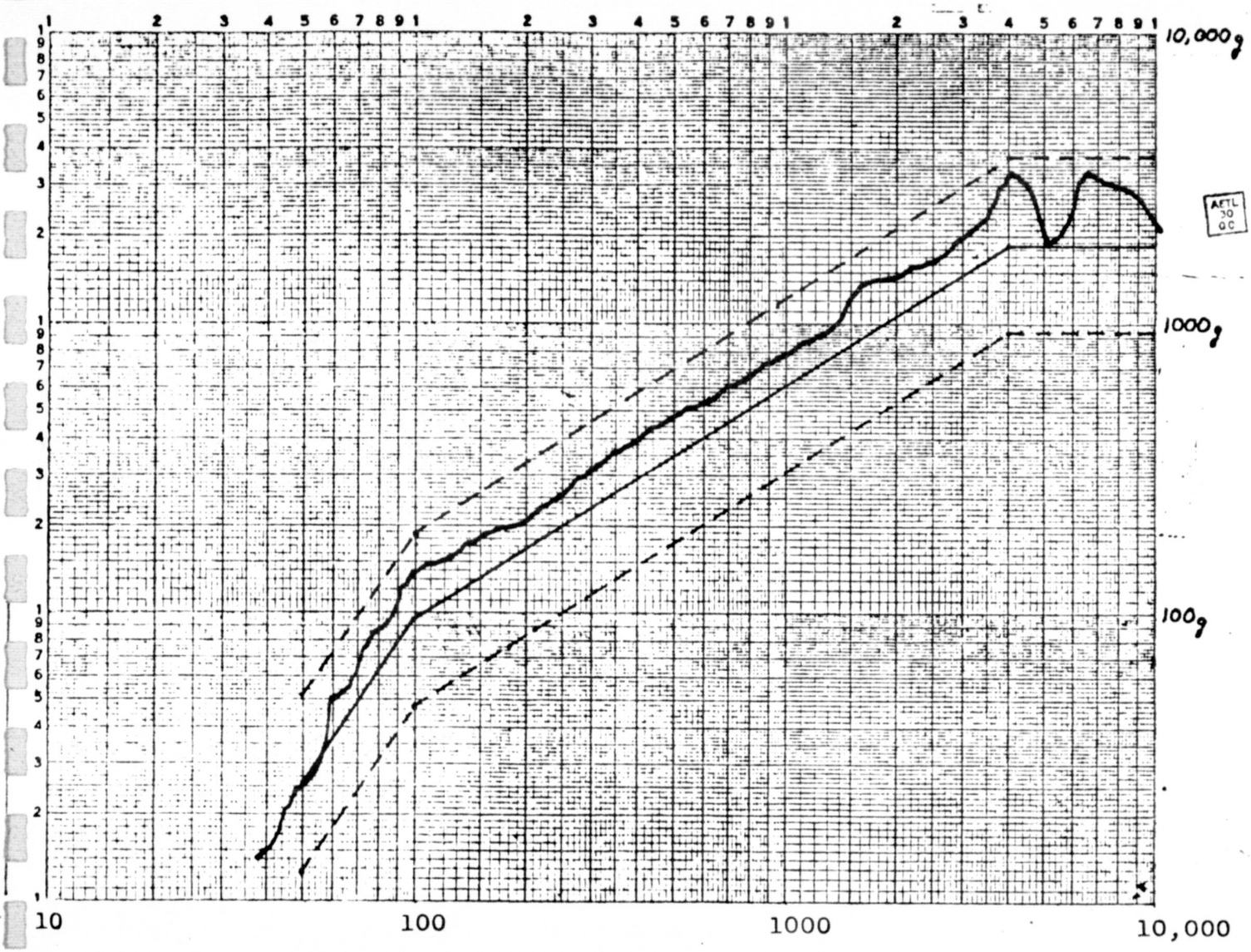
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

SPECIMEN S/N 0014 + 0016 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS X FULL SCALE 10,000g PK

MISSION #1
SHOCK SPECTRUM



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APPROVED ENGINEERING TEST LABORATORIES

Run No. 4

J/N 773-2612

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

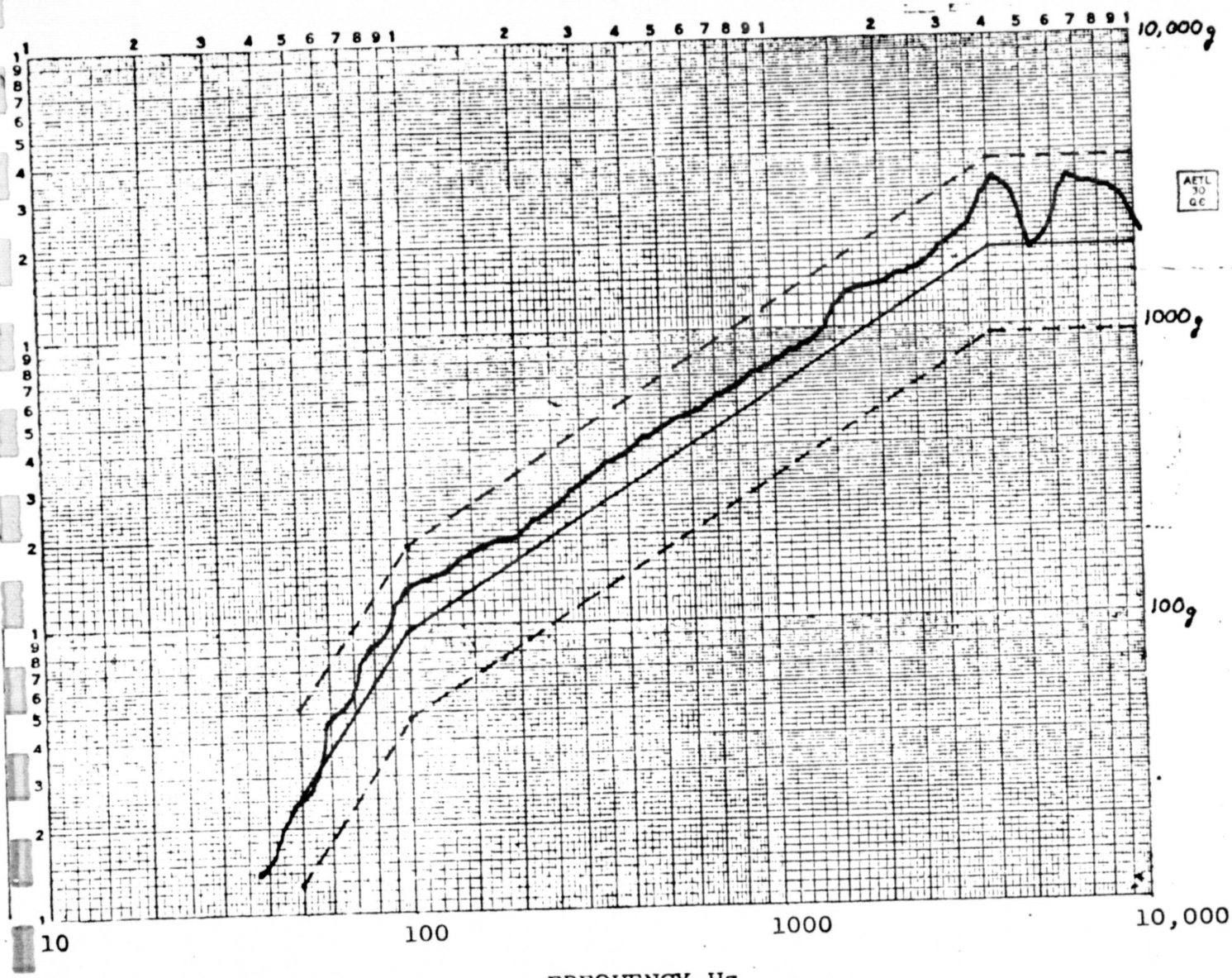
SPECIMEN S/N 0016 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #1

SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 5

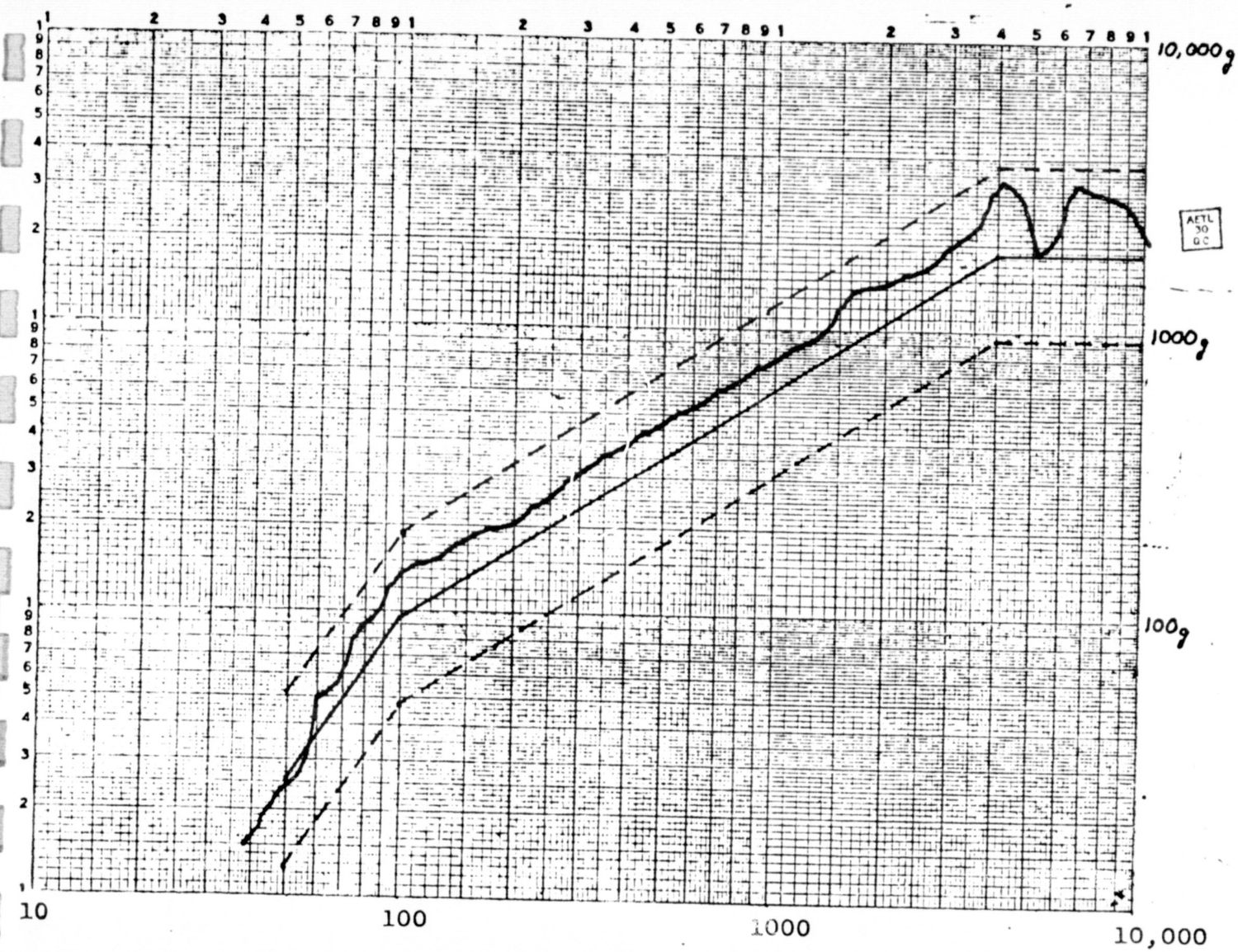
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

SPECIMEN S/N 0014 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #1
SHOCK SPECTRUM



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APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 6

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

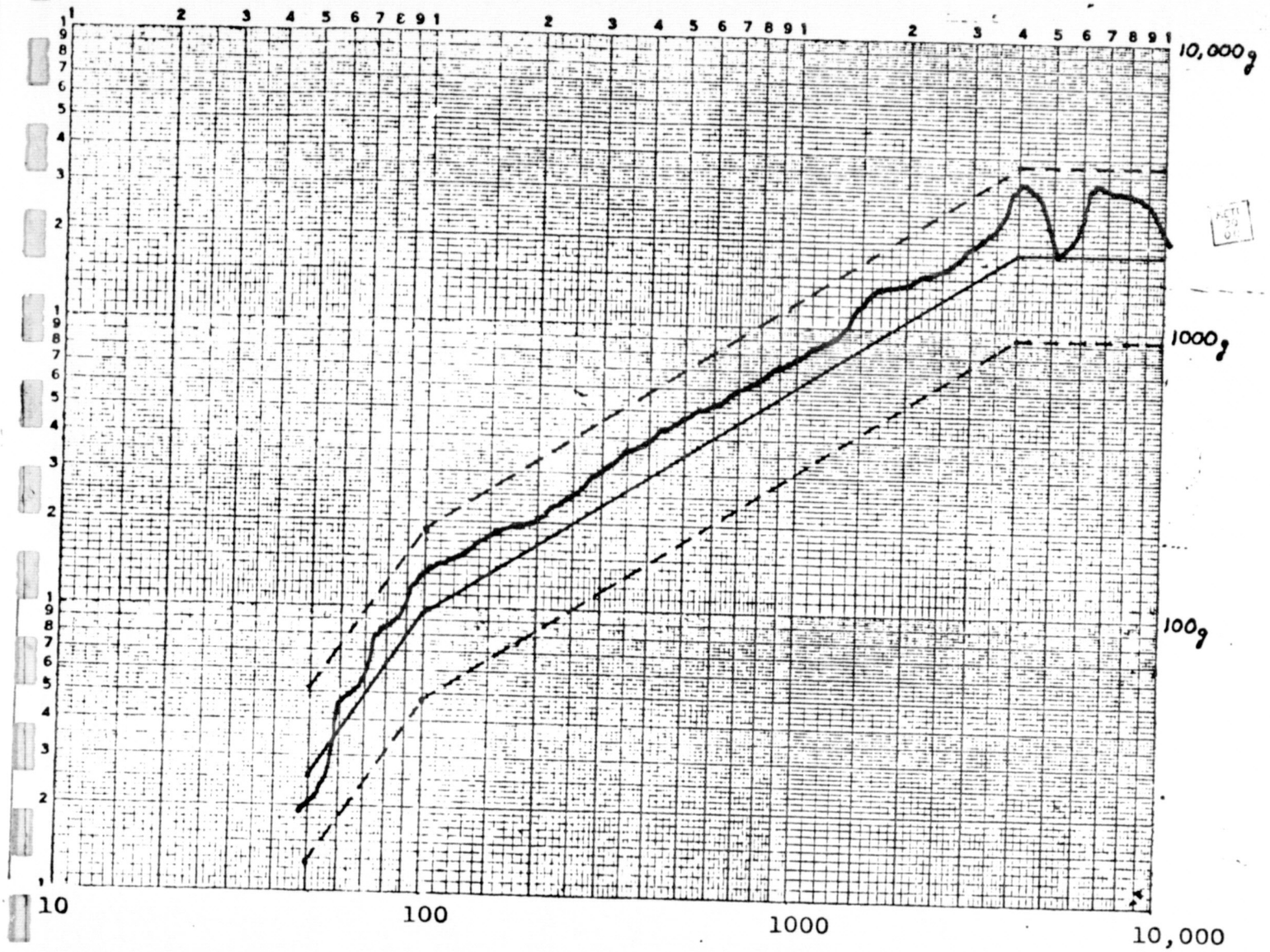
SPECIMEN S/N 0017 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #1

SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

Run No. 7

J/N 773-2612

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

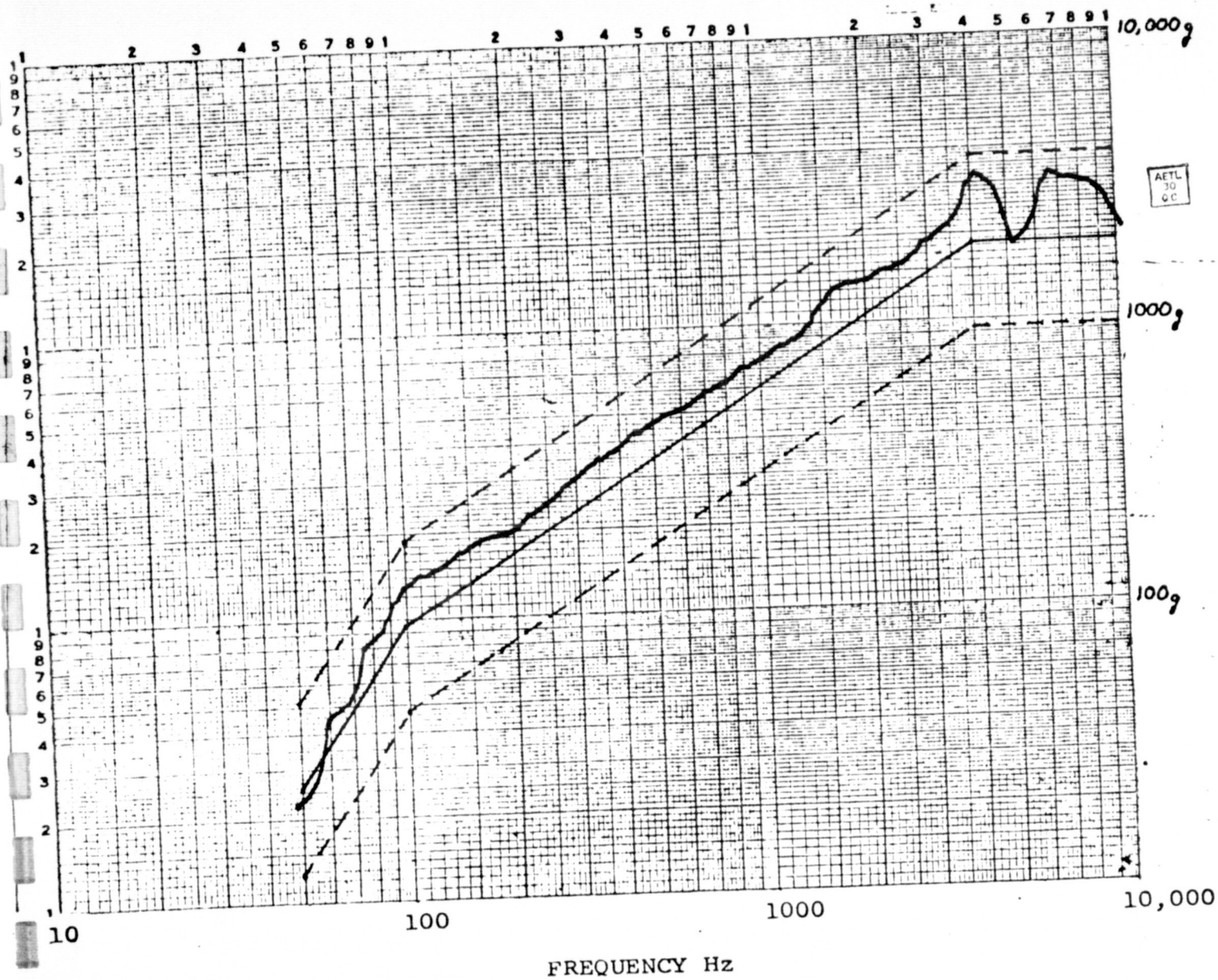
SPECIMEN S/N 0017 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #2-6

SHOCK SPECTRUM



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APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 8

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

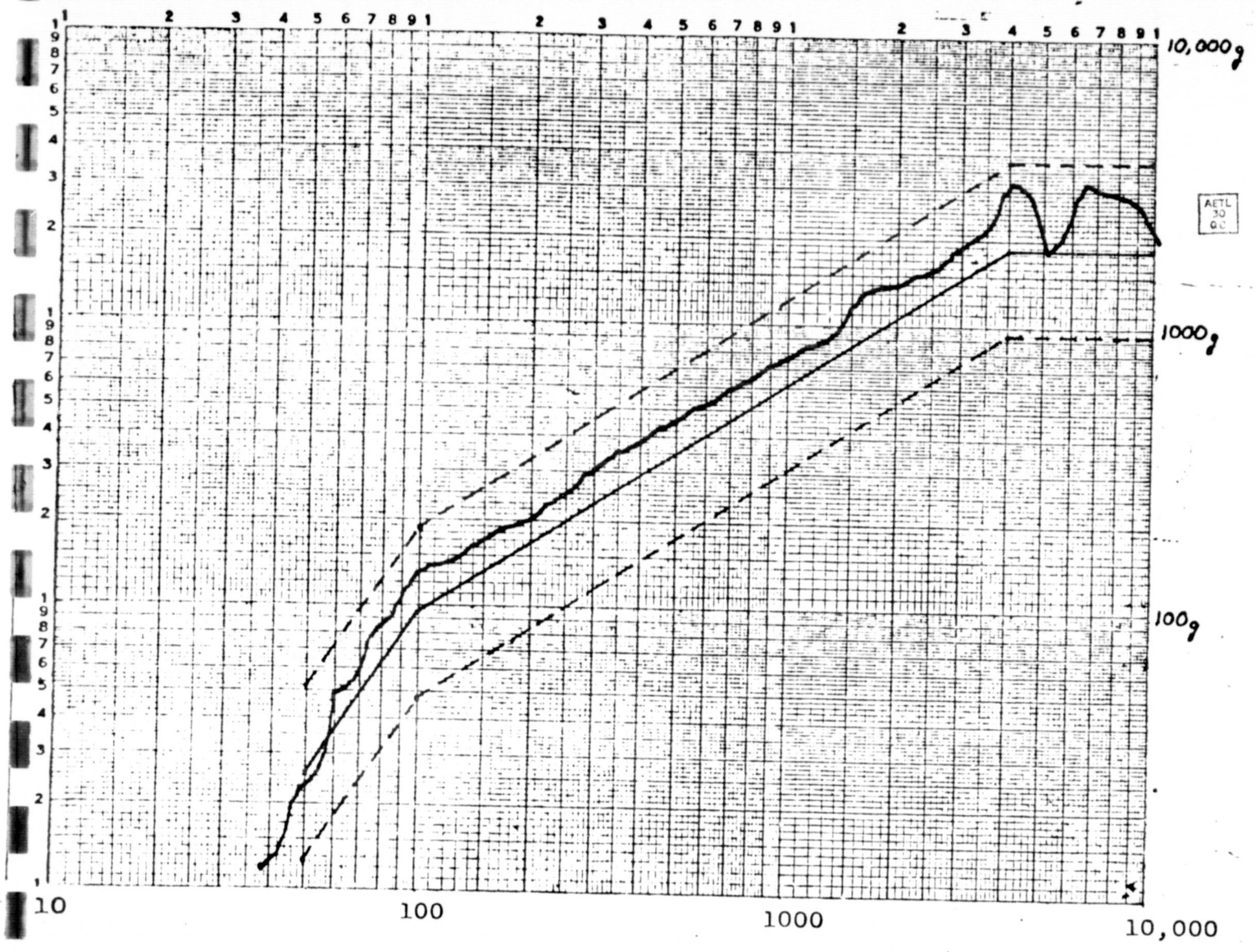
SPECIMEN S/N 0018 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #1

SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 9

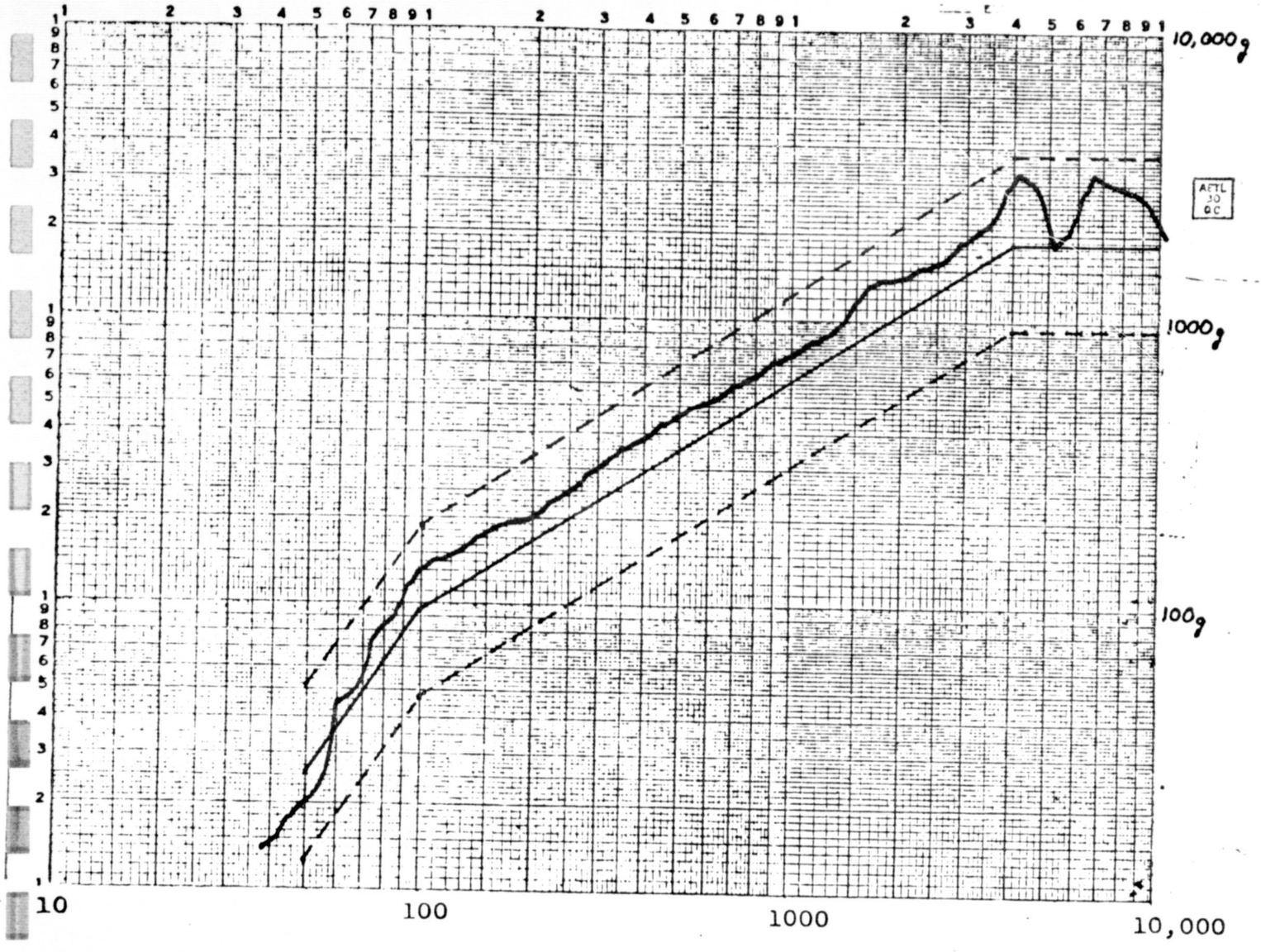
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

SPECIMEN S/N 0018 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #2-6
SHOCK SPECTRUM



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APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612

Run No. 10

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

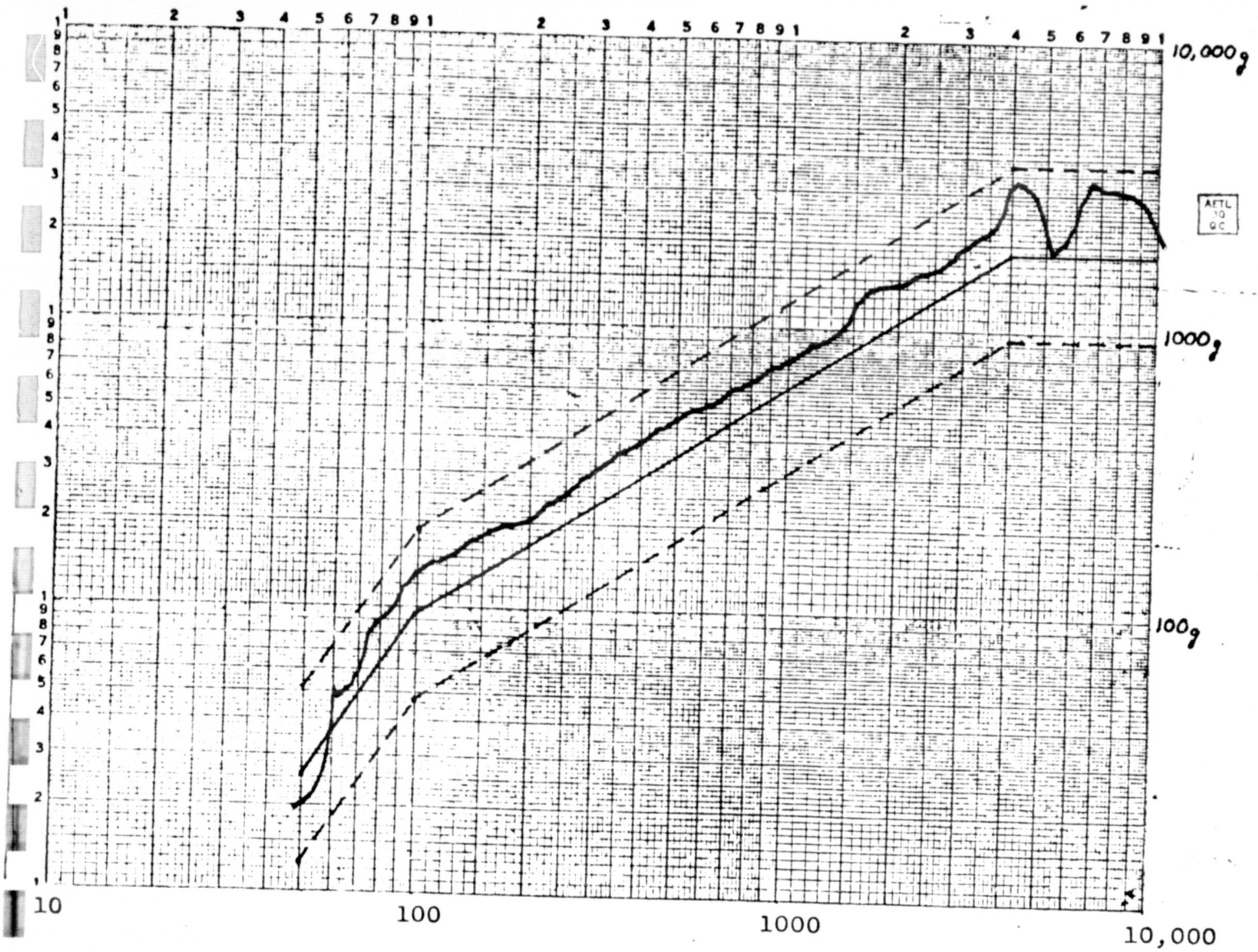
SPECIMEN S/N 0017 +0018 P/N 816780

ACCEL. No. 1 CONTROL (✓) I SPONSE ( )

TECHNICIAN G.W. CAYER AXIS X FULL SCALE 10,000g PK

MISSION #1

SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 11

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

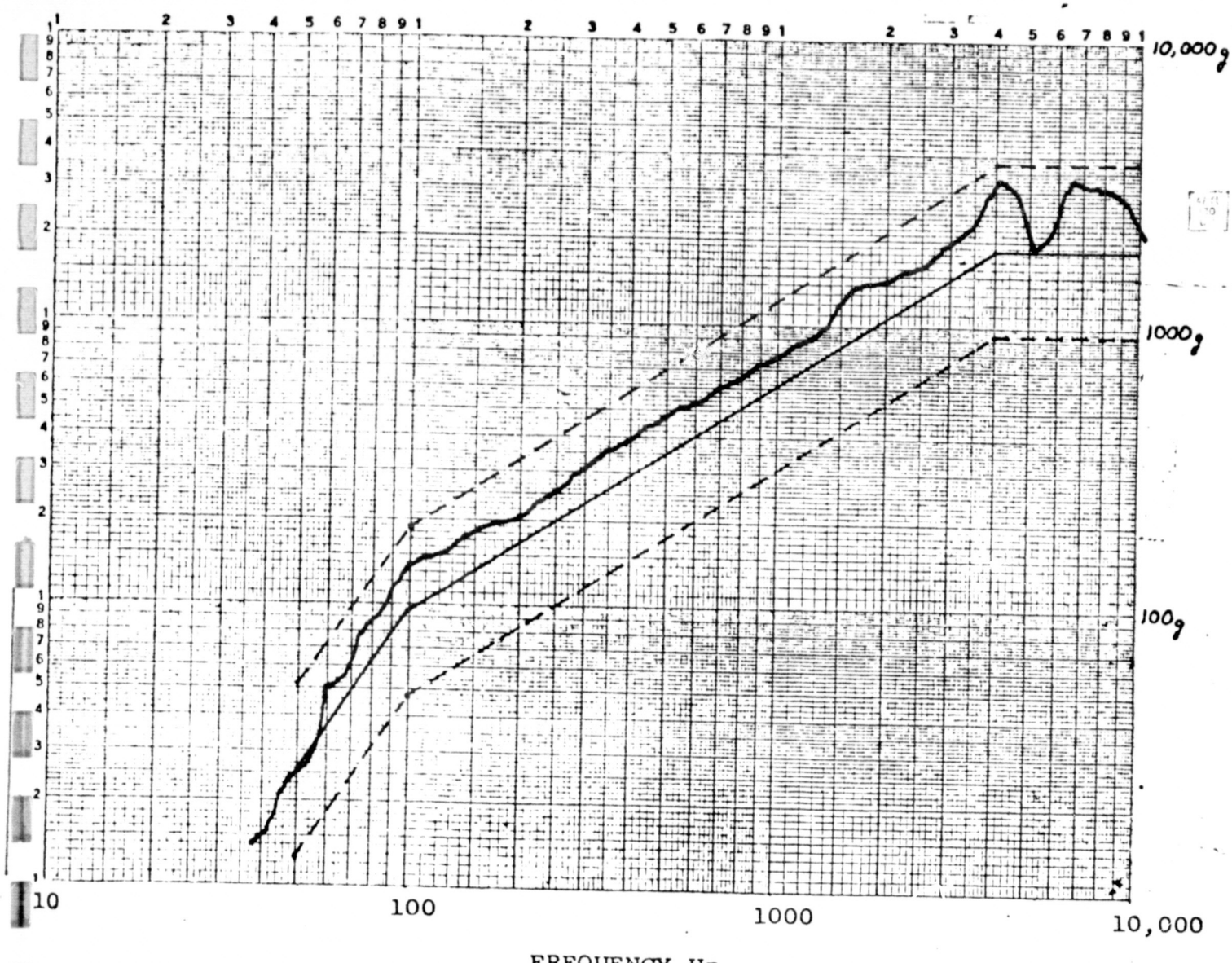
SPECIMEN S/N 0017 + 0018 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS X FULL SCALE 10,000g PK

MISSION #2-6

SHOCK SPECTRUM



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J/N 773-2612

Run No. 12

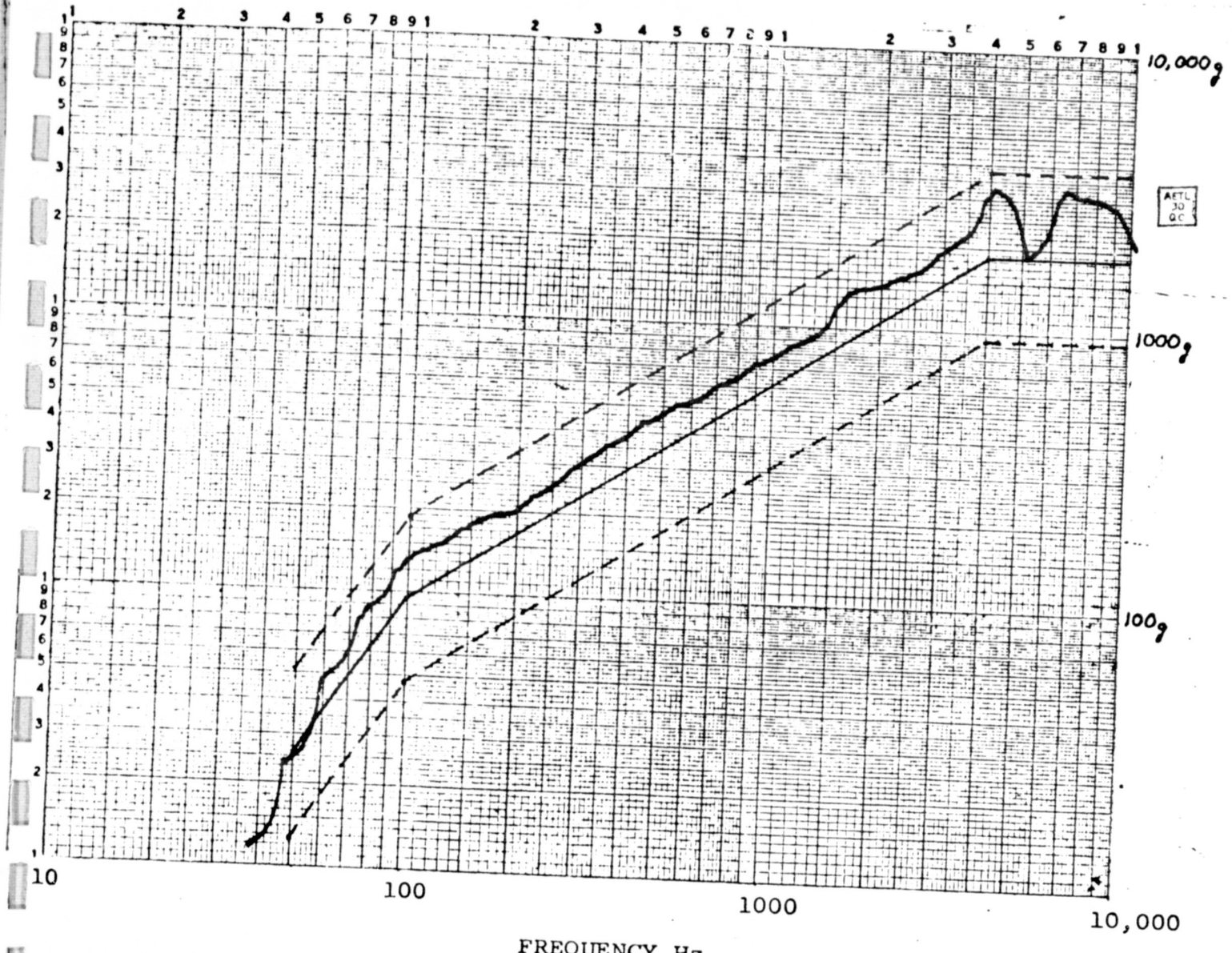
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

SPECIMEN S/N 0017 + 0018 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Z FULL SCALE 10,000g PK

MISSION #1
SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 13

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

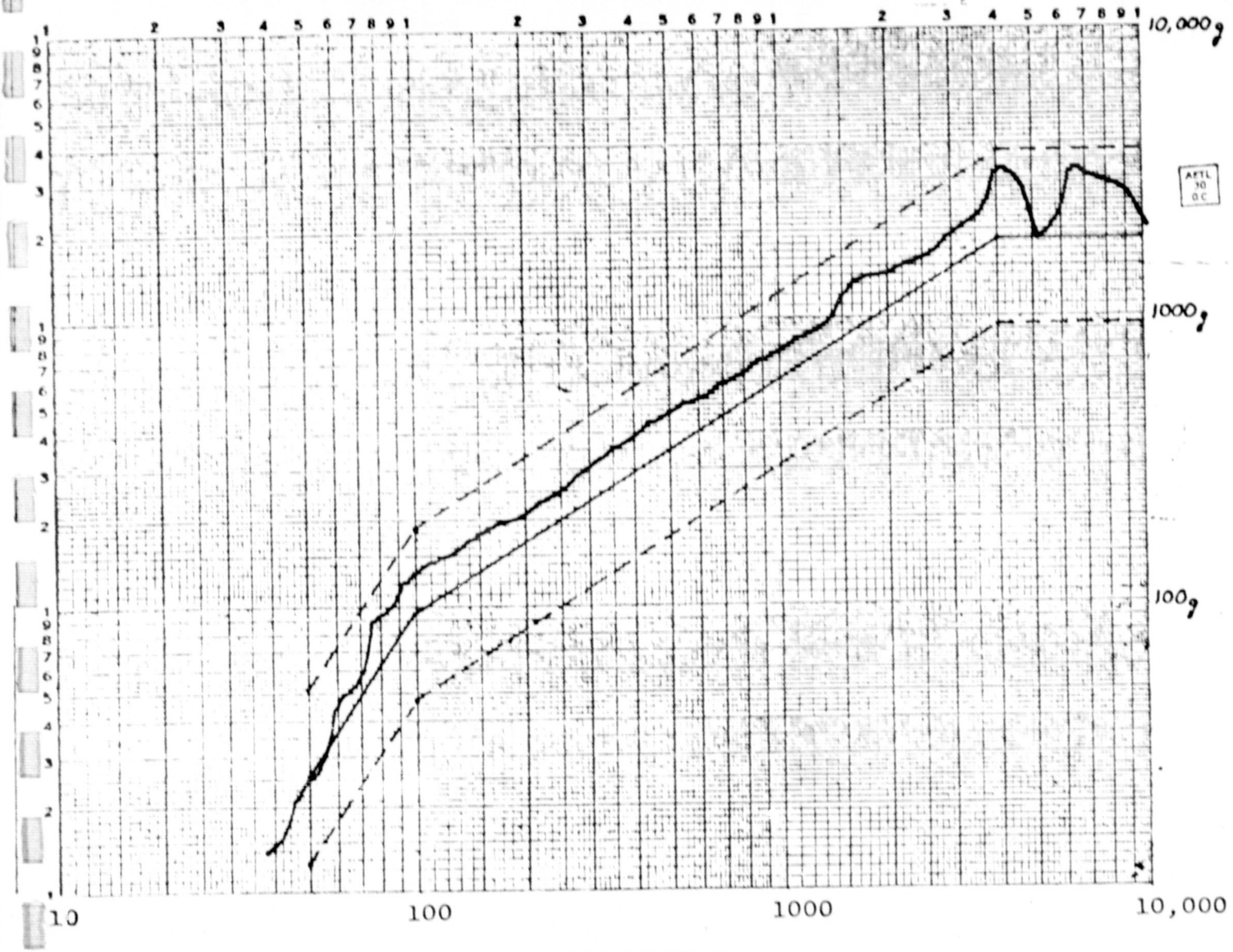
SPECIMEN S/N 0017 + 0018 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Z FULL SCALE 10,000g PK

MISSION #2-6

SHOCK SPECTRUM



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J/N 773-2612 Run No. 14

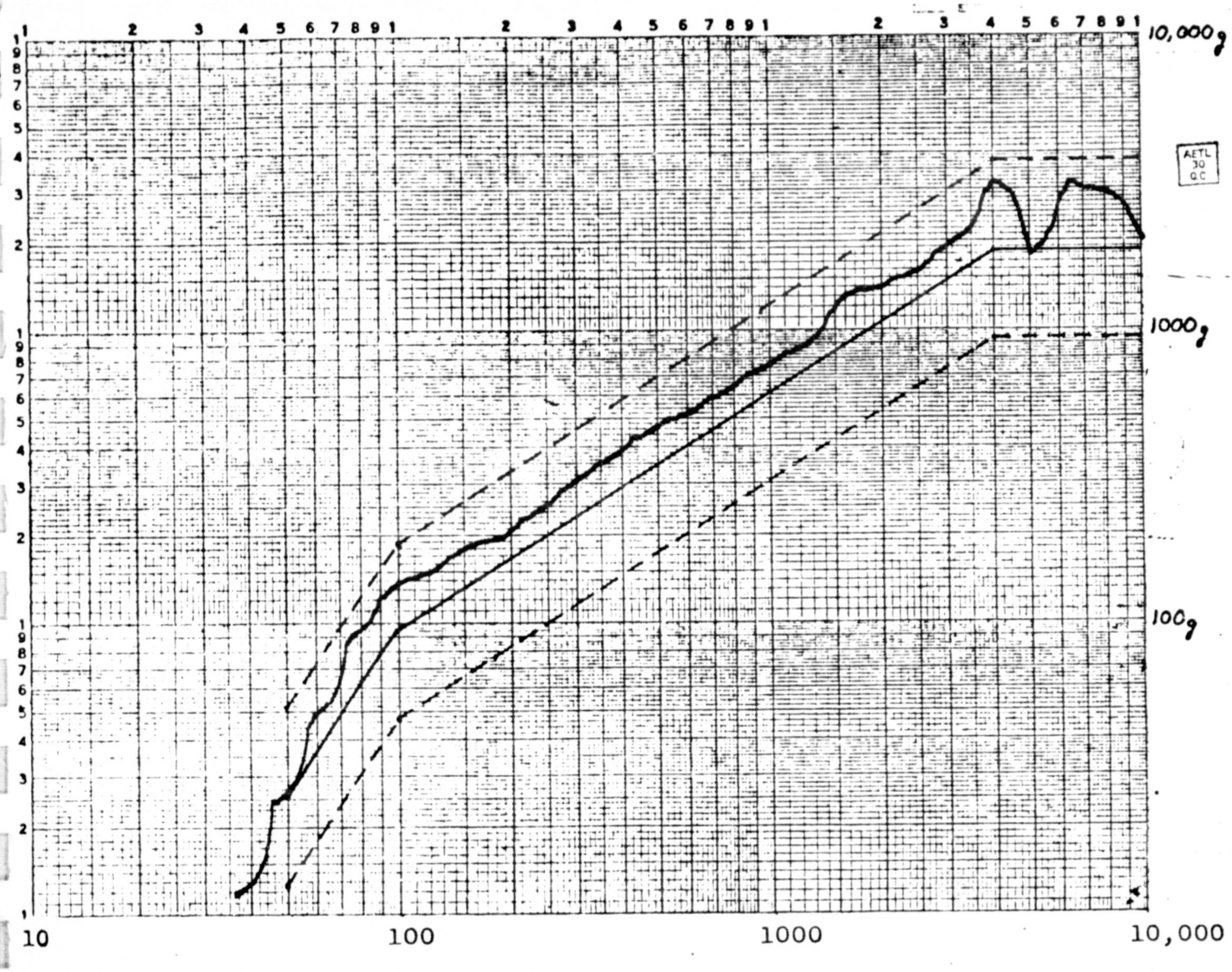
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Z FULL SCALE 10,000g PK

MISSION #1
SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 15

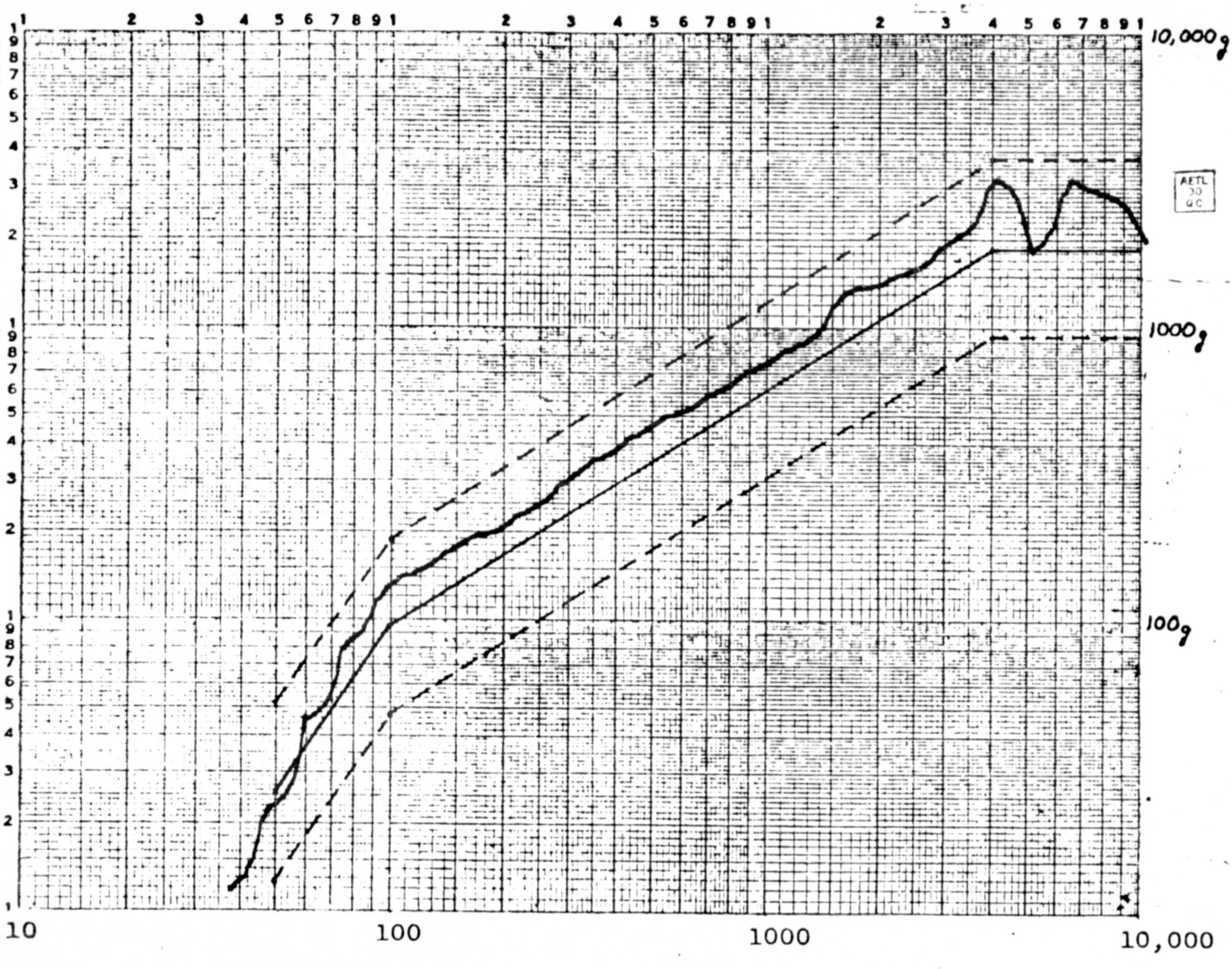
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Z FULL SCALE 10,000g PK

MISSION #2-6
SHOCK SPECTRUM



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APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 16

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-14-78

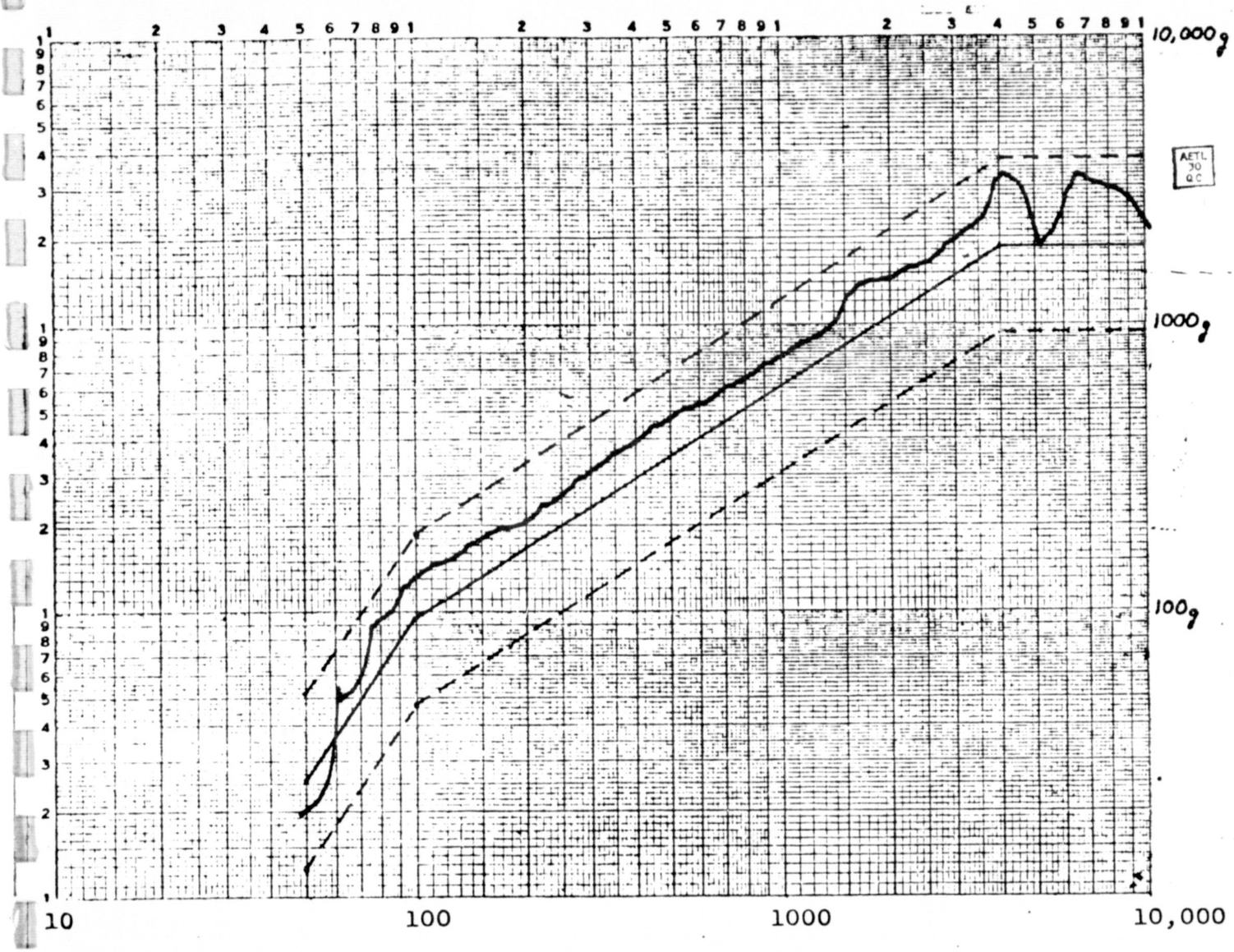
SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Z FULL SCALE 10,000g PK

MISSION # 7-10

SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 17

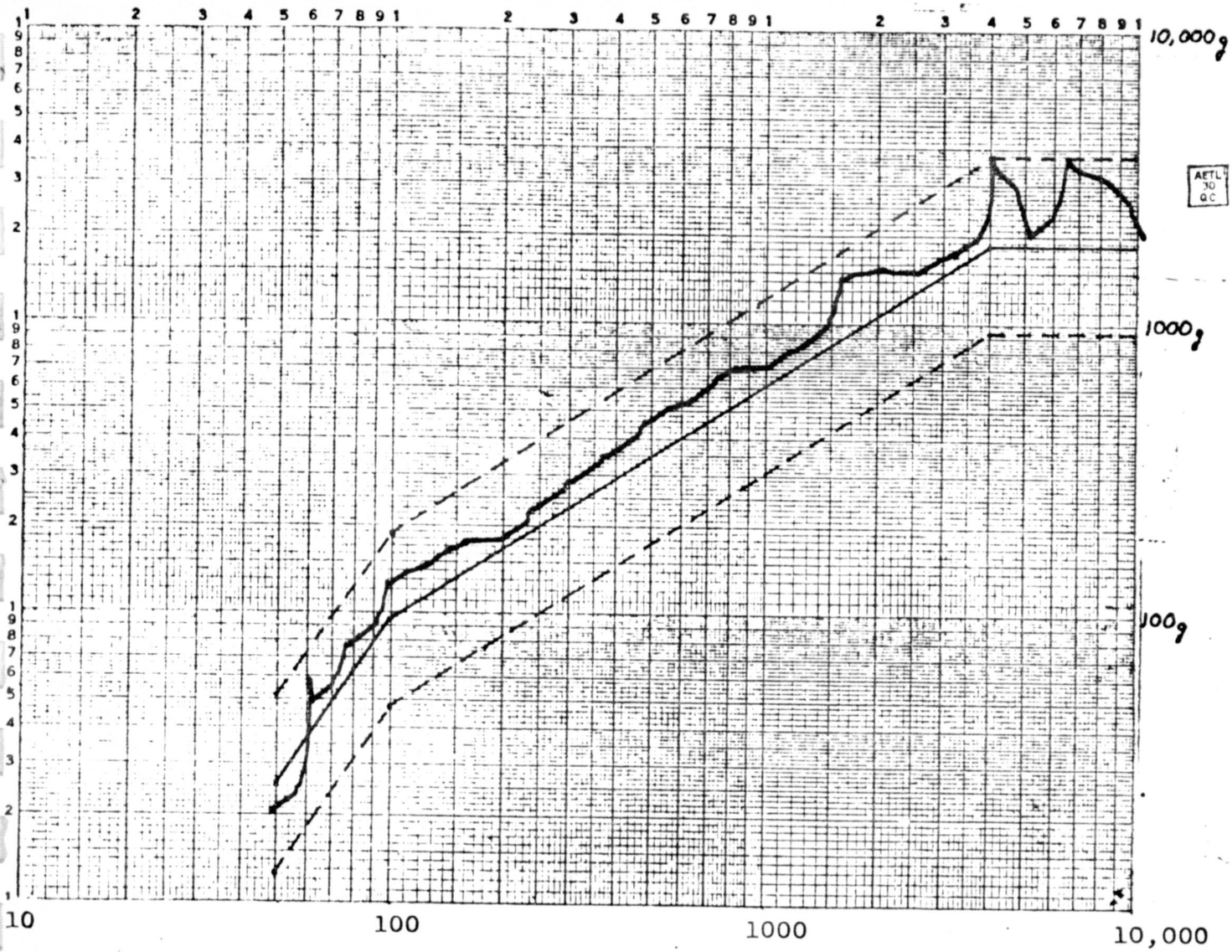
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-15-78

SPECIMEN S/N FIXTURE P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS X, Y, Z FULL SCALE 10,000g PK

EQUALIZATION
SHOCK SPECTRUM



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J/N 773-2612 Run No. 18

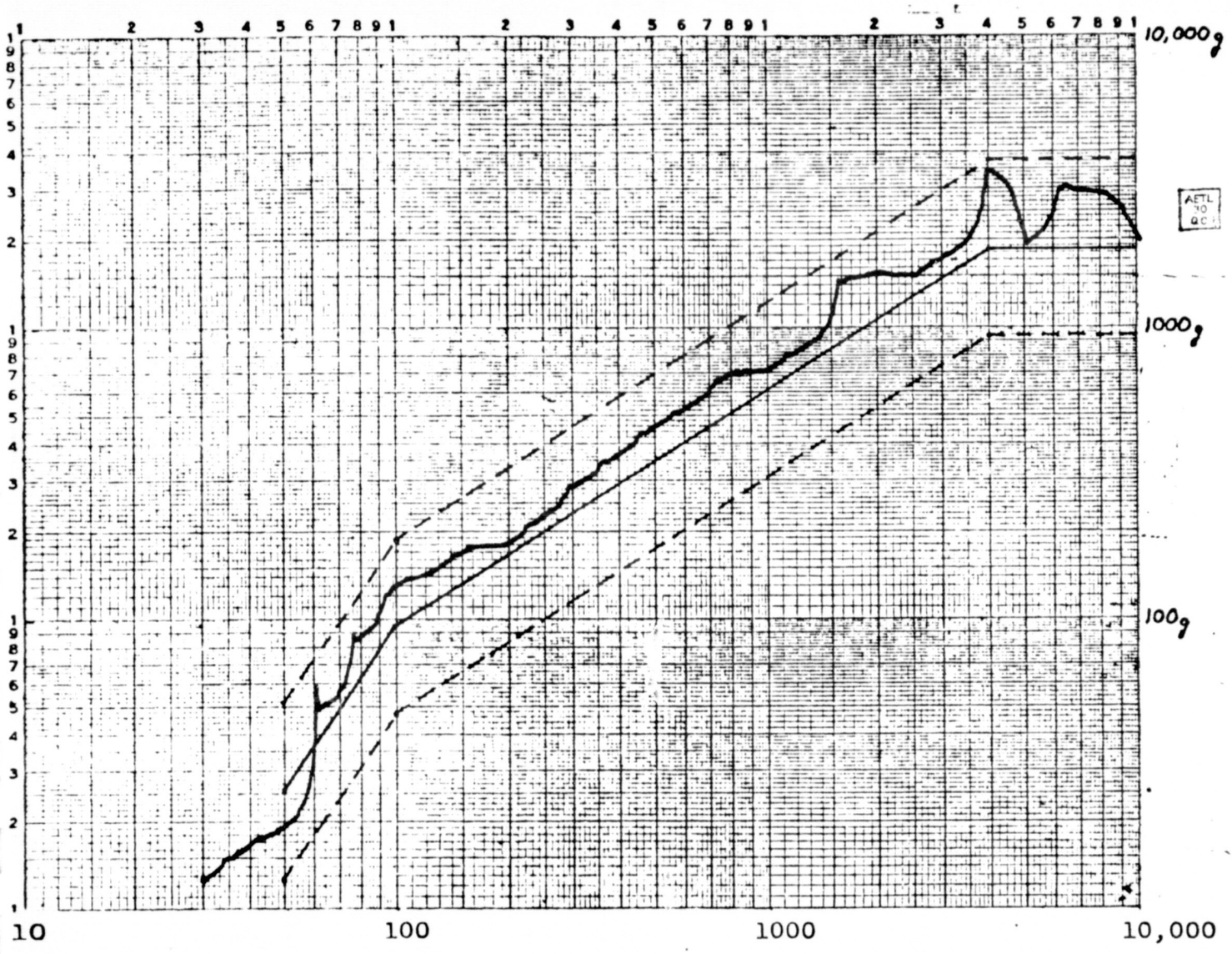
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-15-78

SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS X FULL SCALE 10,000g PK

MISSION #1
SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 19

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-15-78

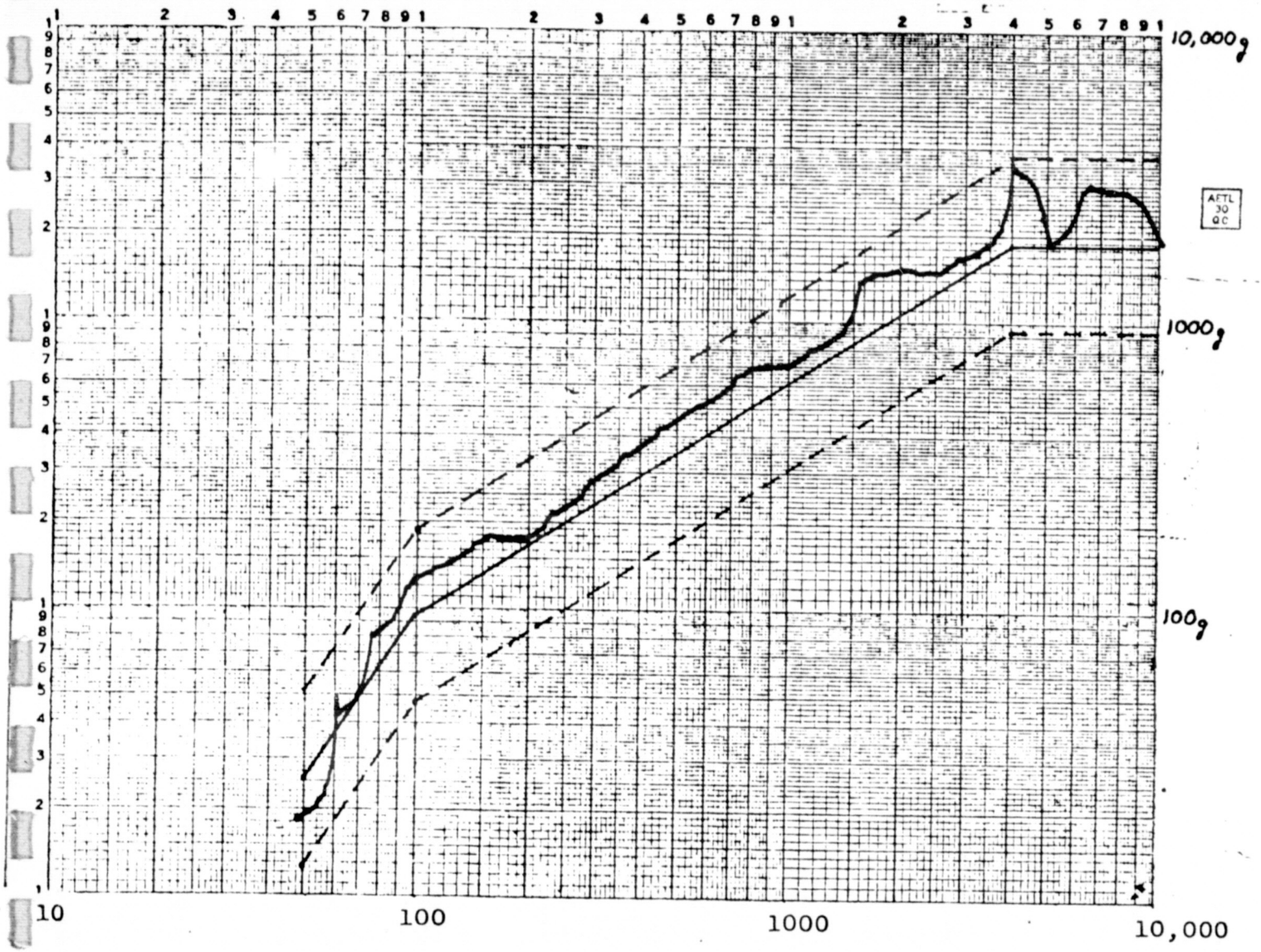
SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS X FULL SCALE 10,000g PK

MISSION #2-6

SHOCK SPECTRUM



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J/N 773-2612 Run No. 20

CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-15-78

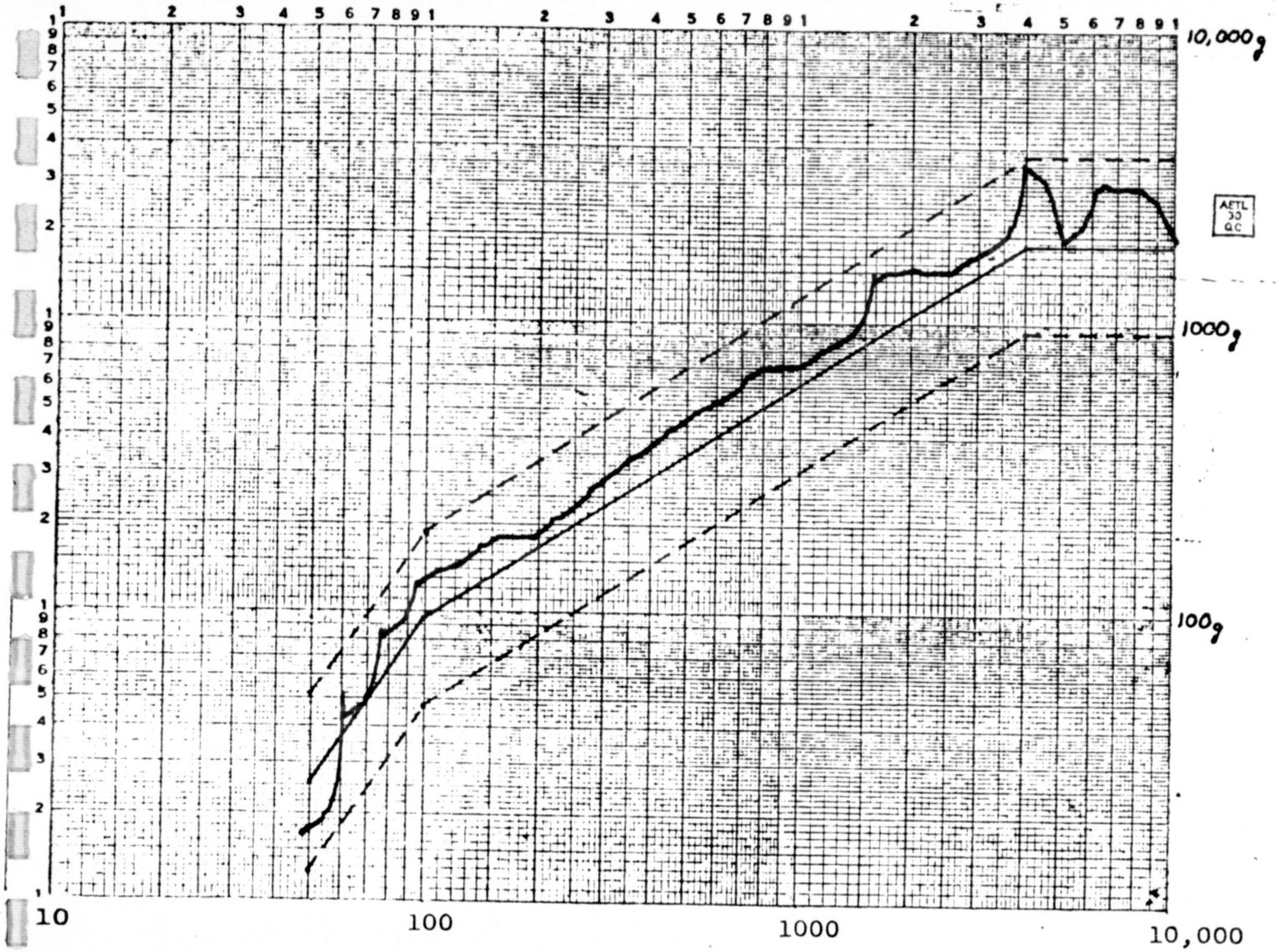
SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS X FULL SCALE 10,000g PK

MISSION #7-10

SHOCK SPECTRUM



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Run No. 21

J/N 773-2612

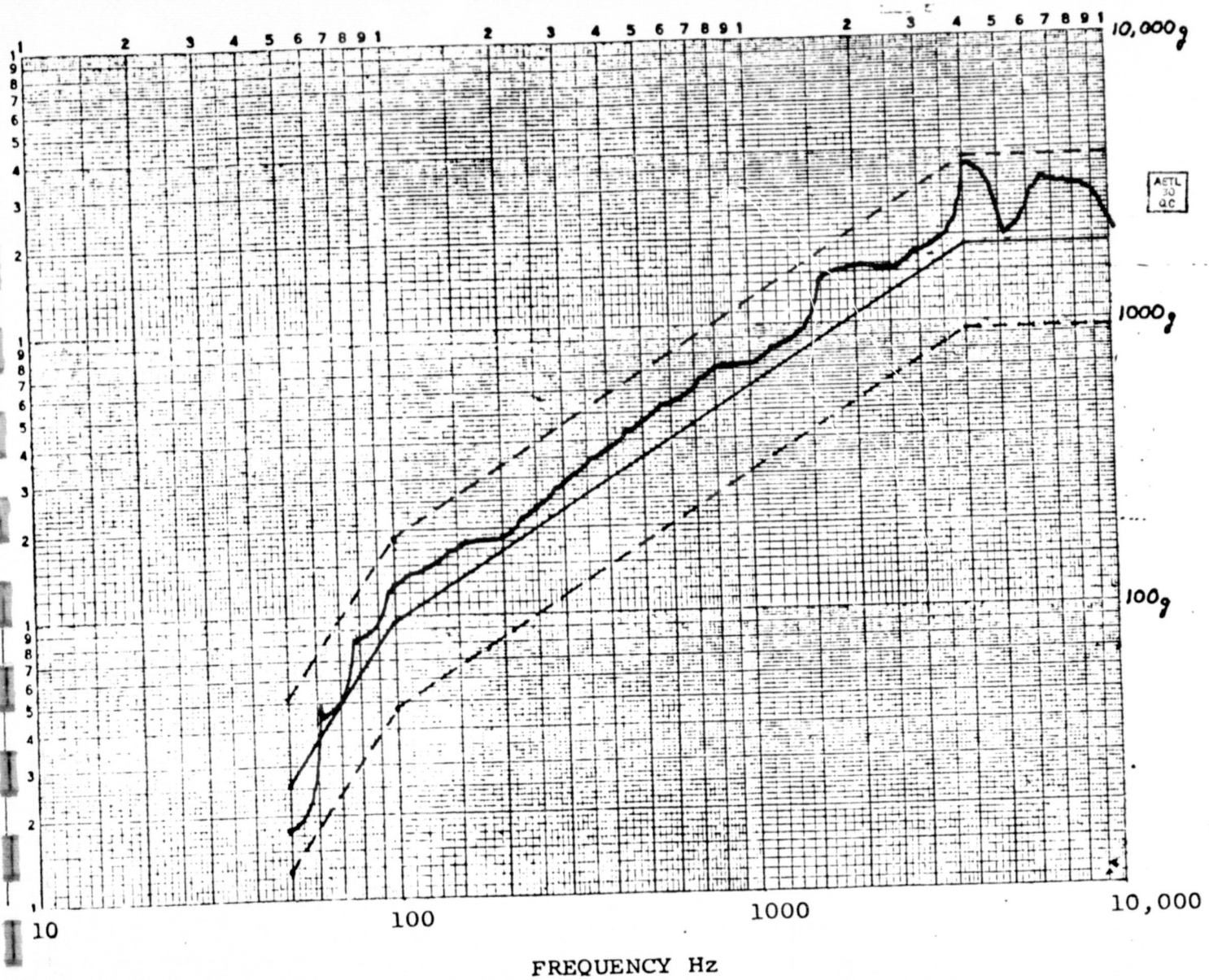
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-15-78

SPECIMEN S/N 0020 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #1
SHOCK SPECTRUM



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J/N 773-2612

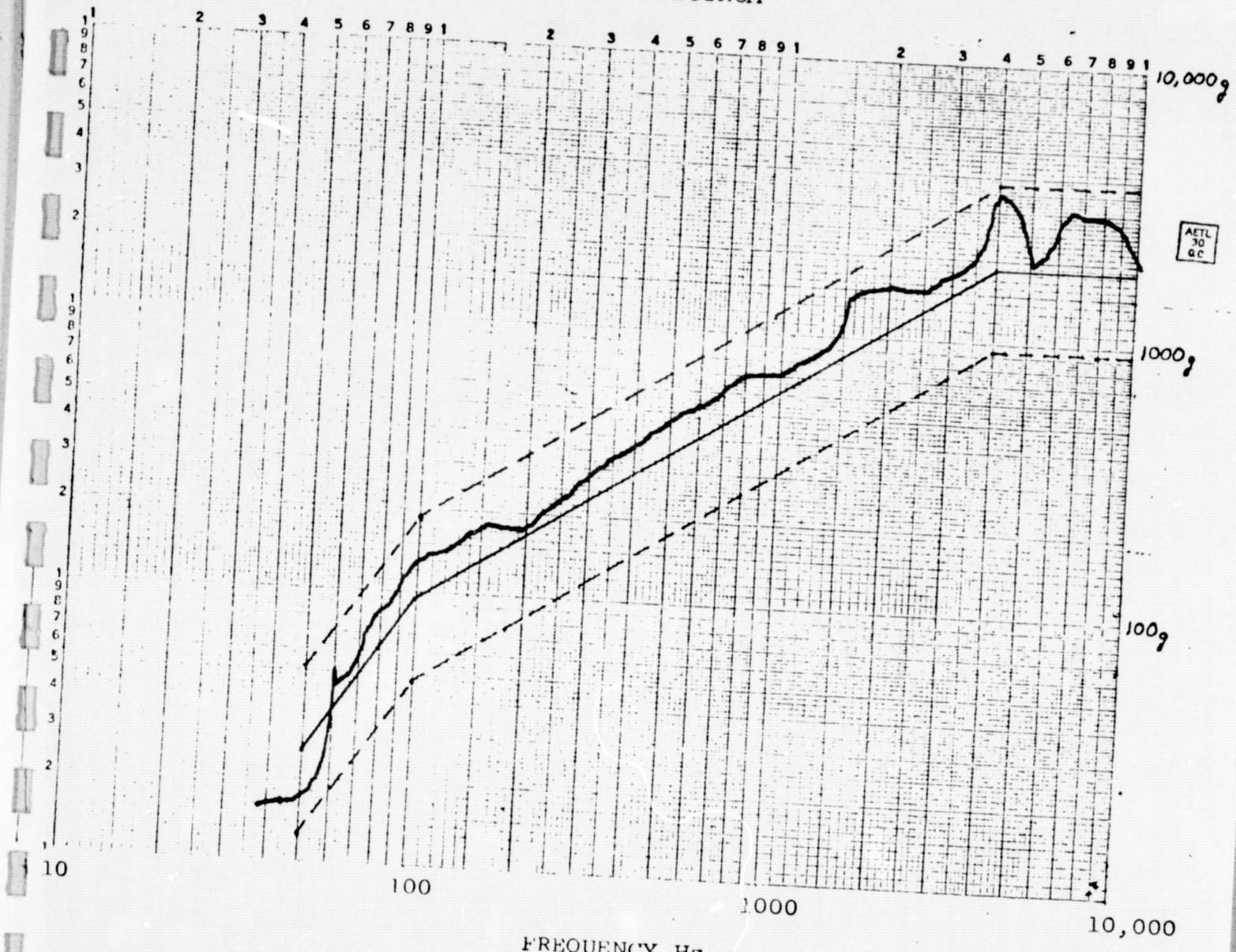
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-15-78 Run No. 22

SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #1
SHOCK SPECTRUM



APPROVED ENGINEERING TEST LABORATORIES

J/N 773-2612 Run No. 23

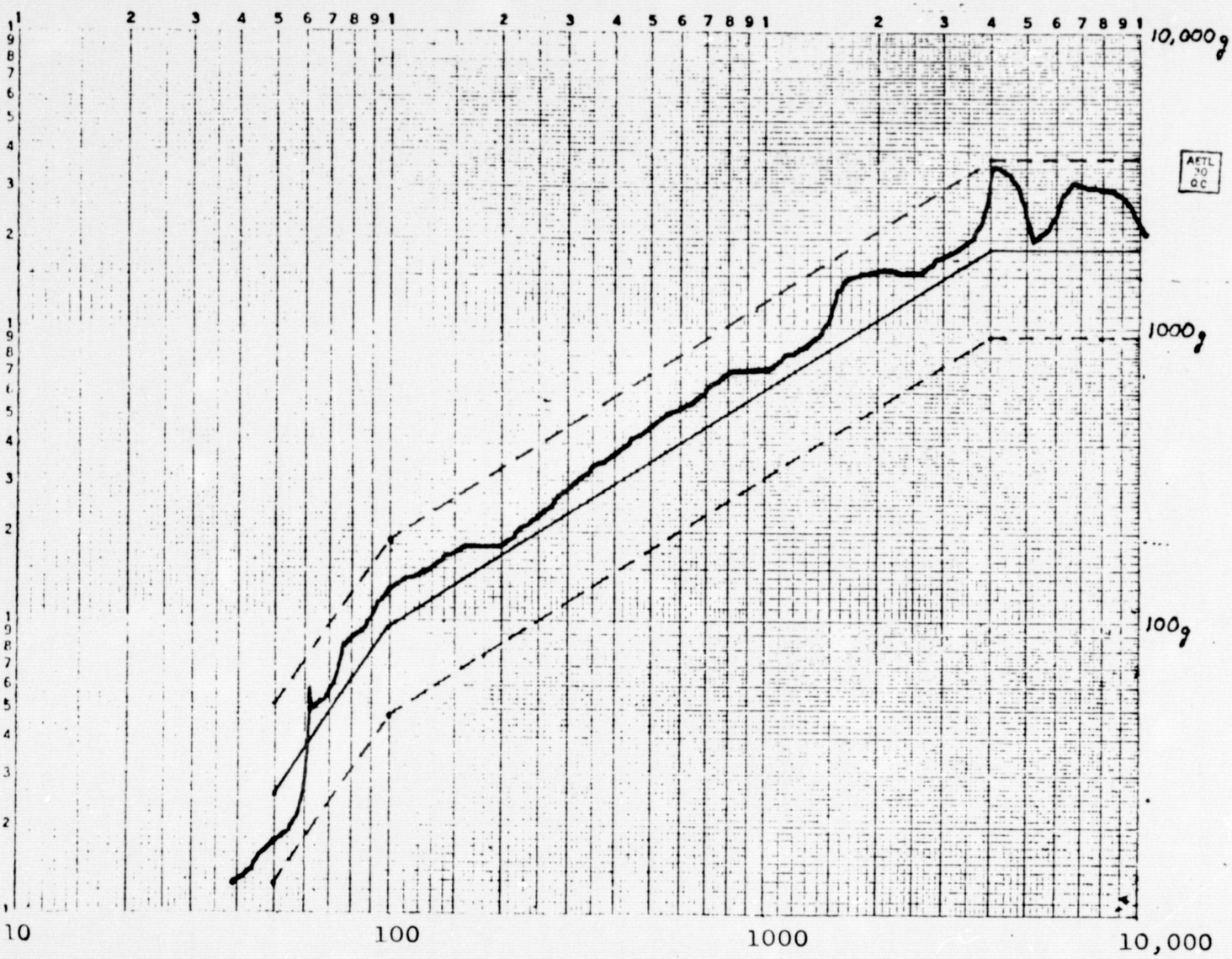
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-15-78

SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #2-6
SHOCK SPECTRUM



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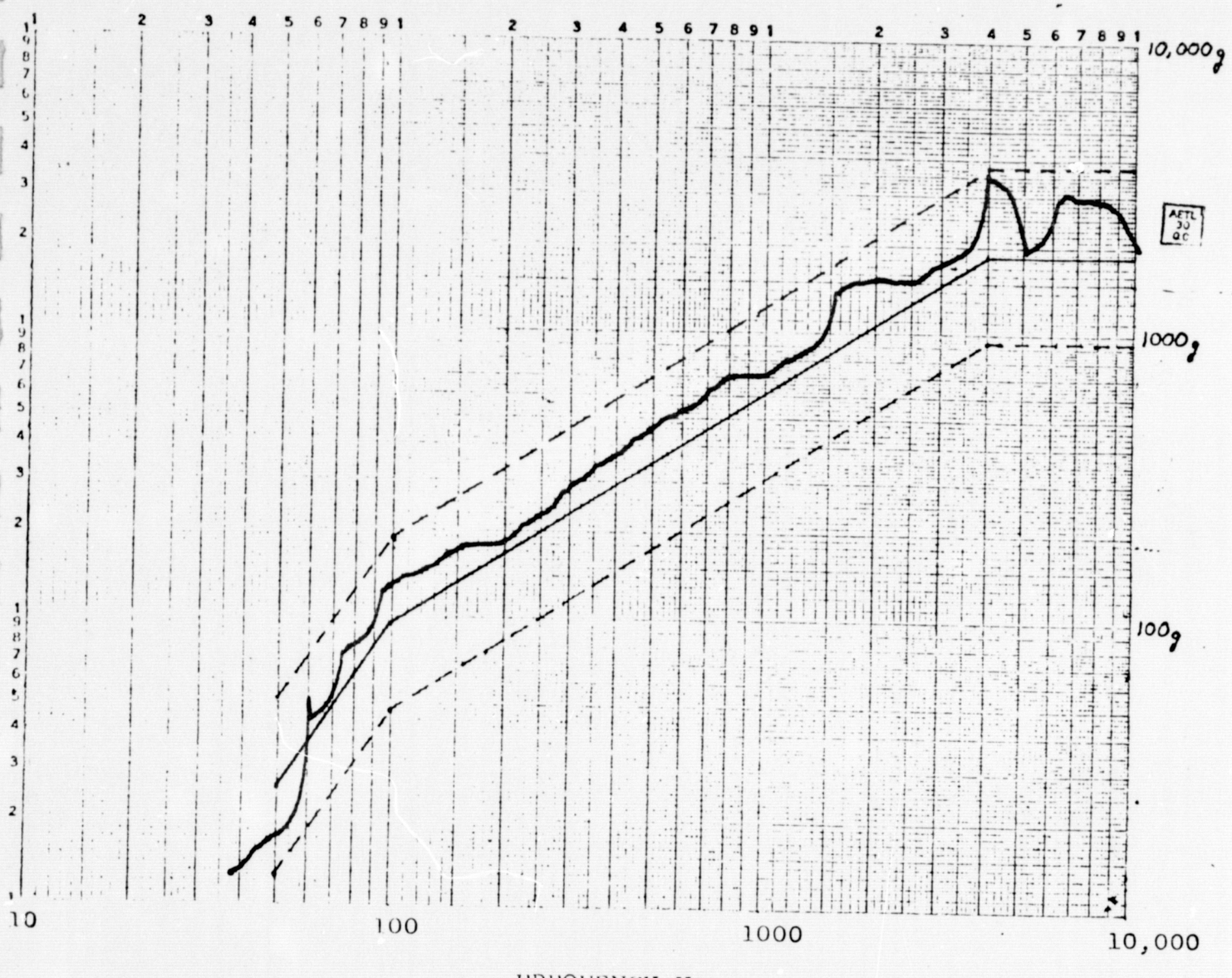
CUSTOMER TELEDYNE McCORMICK SELPH DATE 3-15-78

SPECIMEN S/N 0019 P/N 816780

ACCEL. No. 1 CONTROL (✓) RESPONSE ( )

TECHNICIAN G.W. CAYER AXIS Y FULL SCALE 10,000g PK

MISSION #7-10
SHOCK SPECTRUM



AETL TEST DATA SHEET MJO No. 773-2612 3/16-17/78

APPROVED ENGINEERING TEST LABORATORIES / 1536 EAST VALENCIA / FULLERTON, CALIFORNIA 92631 / TEL. (714) 879-6110

A NATIONAL TECHNICAL SERVICES COMPANY

CUSTOMER: Teledyne McCormick Selph TEST ITEM: Safety & Arming Device P/N 816780
SPECIFICATION: QPT 816780, Para. 5.5
EQUIPMENT LIST: AETL constructed shock tower.

Date	Shock Requirement **	Duration (ms)	AXIS	"Gs"	Mission No.	Impacts Applied	S/N's
3/16/78	SRB Water Landing	100	X	20	1	2	14, 16, 17, 18&19
"	"	100	Y	20	1	2	"
"	"	150	Z	30	1	2	"
"	SRB Parachute	300	X	11	1	2	"
"	"	300	Y	11	1	2	"
"	"	300	Z	6	1	2	"
"	"	300	X	11	2-6	10	17, 18 & 19
"	"	300	Y	11	2-6	10	"
"	"	300	Z	6	2-6	10	"
"	SRB Water L	100	X	20	2-6	10	"
"	"	100	Y	20	2-6	10	"
"	"	150	Z	30	2-6	10	"
3/17/78	"	150	Z	30	7-10	8	19 only
"	"	100	Y	20	7-10	8	"
"	"	100	X	20	7-10	8	"
"	SRB Parachute	300	X	11	7-10	8	"
"	"	300	Y	11	7-10	8	"
"	"	300	Z	6	7-10	8	"

TEST RESULTS: There appeared to be no damage to the Test Items due to the applied shocks. The Customer performed operational checks after mission sequences and reported no damage due to the applied shocks.

A photo of the Test Set-up was taken and is to be a part of the report.

AETL 30 QC

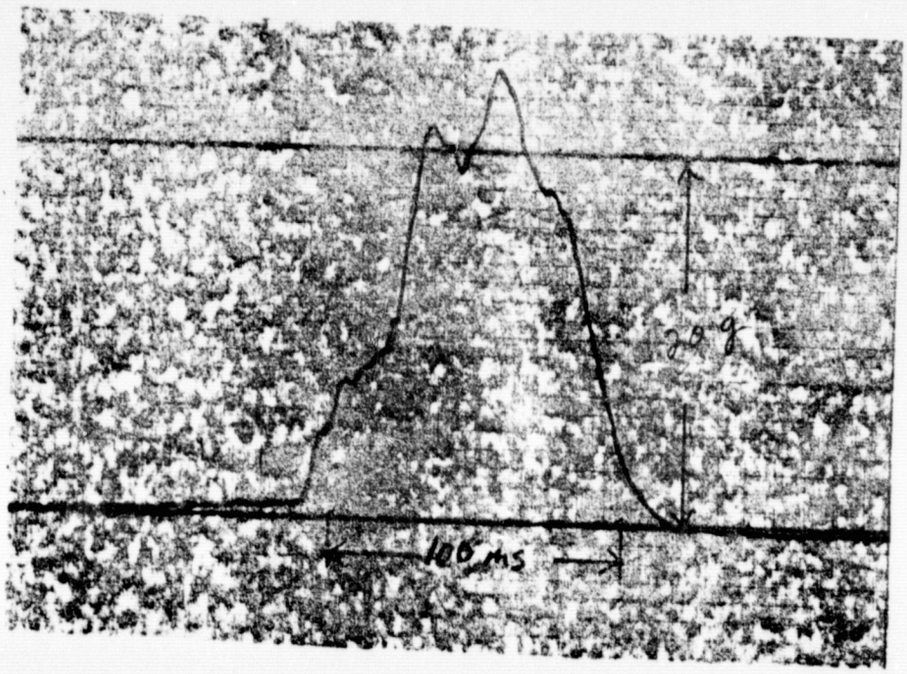
Berry F. Moore/Test Engineer

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OTHER DIVISIONS

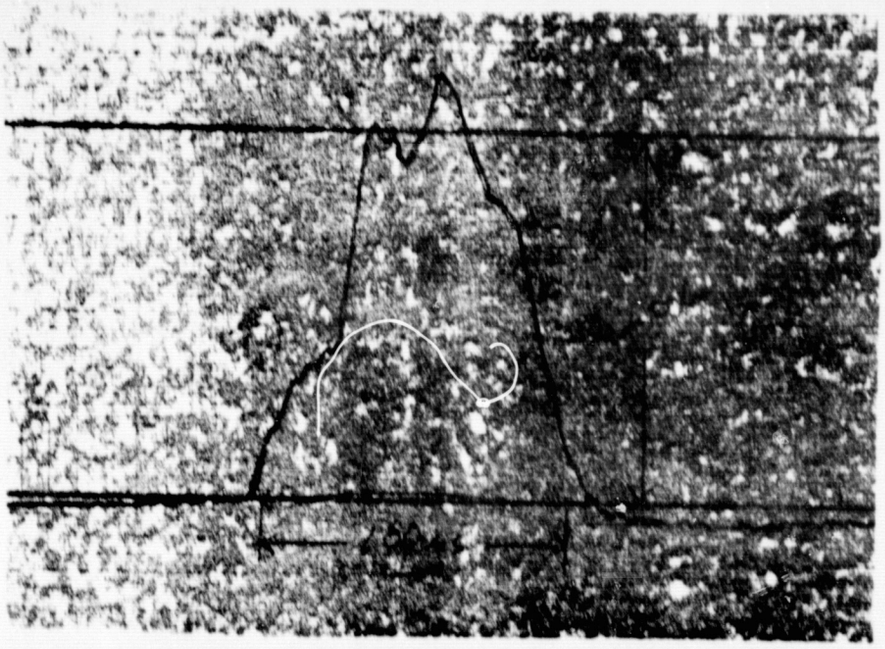
LOS ANGELES DIVISION / 5120 WEST 104TH STREET / LOS ANGELES, CALIFORNIA 90045 / (213) 776-3202
VALLEY DIVISION / 9551 CANOGA AVENUE / CHATSWORTH, CALIFORNIA 91311 / (213) 341-0830
SAUGUS DIVISION / 30988 W. GOLDEN TRIANGLE RD. / SAUGUS, CALIFORNIA 91350 / (805) 259-8184
CALIFORNIA TEST LABS. DIV. / 1432 POTRERO AVE. / SO. EL MONTE, CA 91733 / (213) 283-8465
SO. EL MONTE DIV. / 1431 POTRERO AVENUE / SO. EL MONTE, CALIFORNIA 91733 / (213) 444-9511

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Water Landing

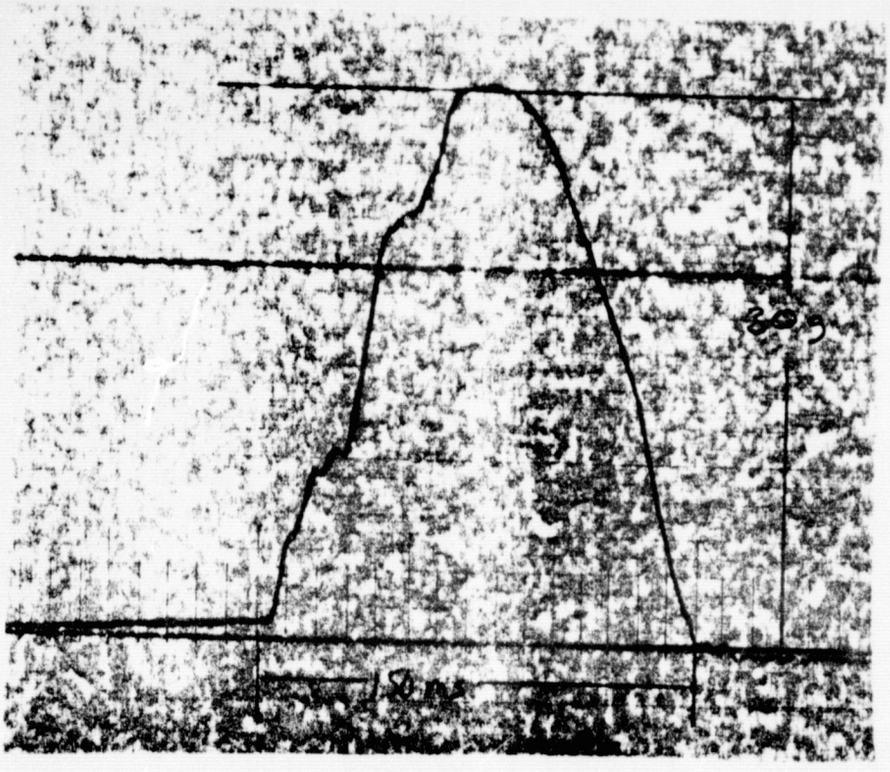
X-Axis, Units 9 & 10, Mission 1, Impact 2



Water Landing

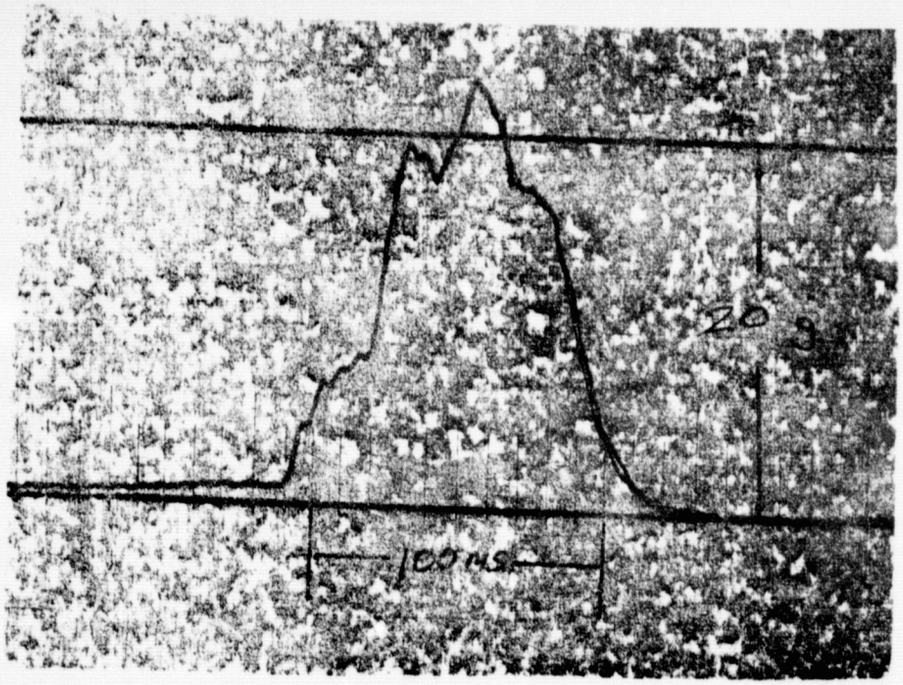
Y-Axis, Units 11 & 12, Mission 1, Impact 1

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Water Landing

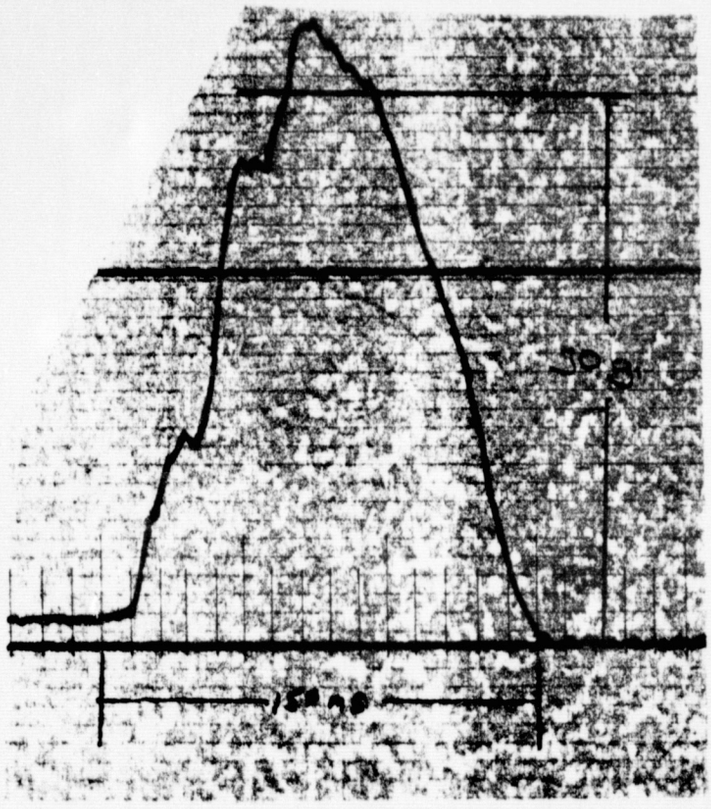
Z-Axis, Units 11 & 12, Mission 1, Impact 2



Water Landing

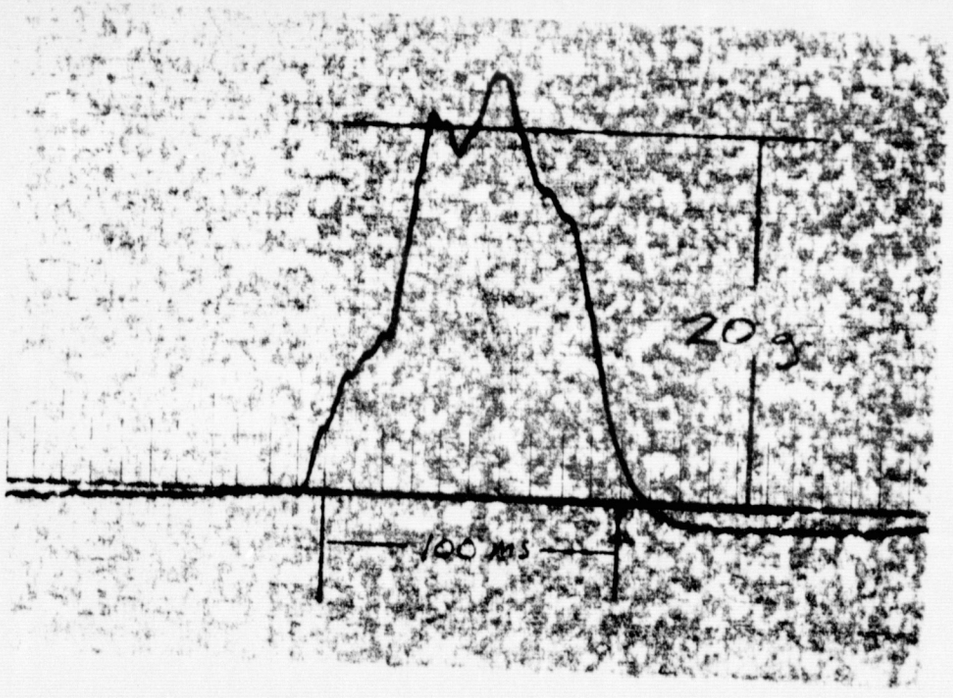
X-Axis, Units 11, 12, 13, Mission 2-6, Impact 5

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Water Landing

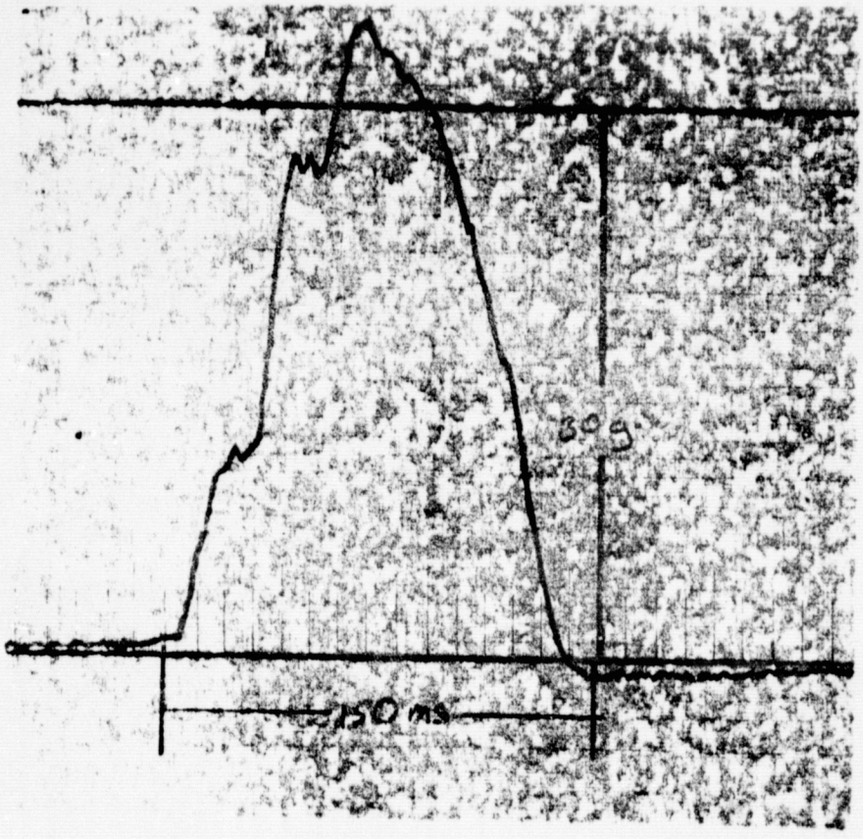
Z Axis, Units 11, 12, 13, Mission 2-6, Impact 10



Water Landing

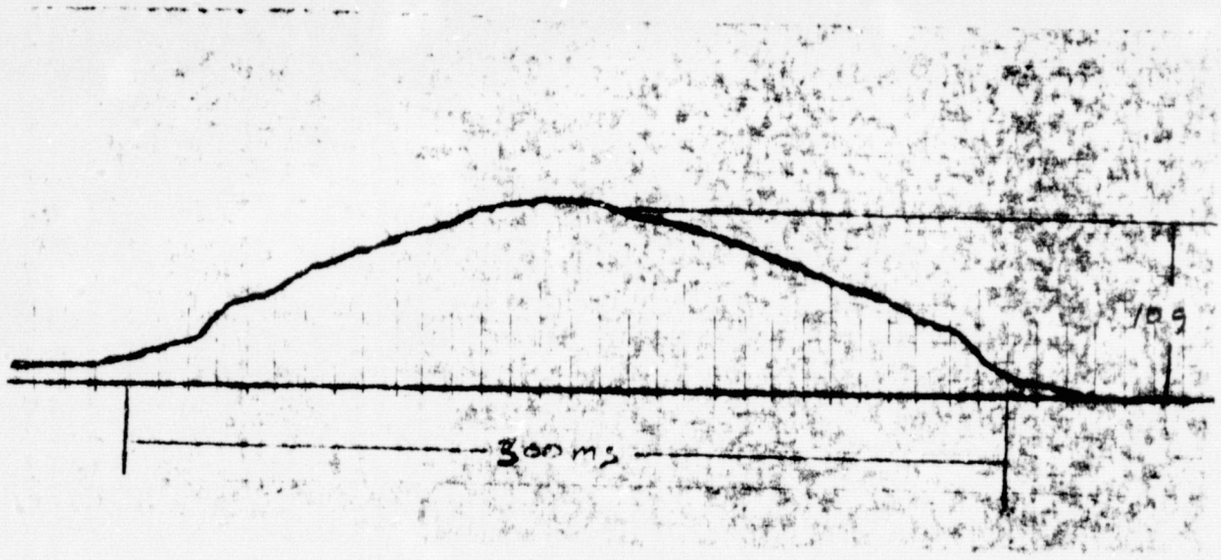
Y Axis, Unit No. 14, Mission 7-10, Impact 1

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Water Landing

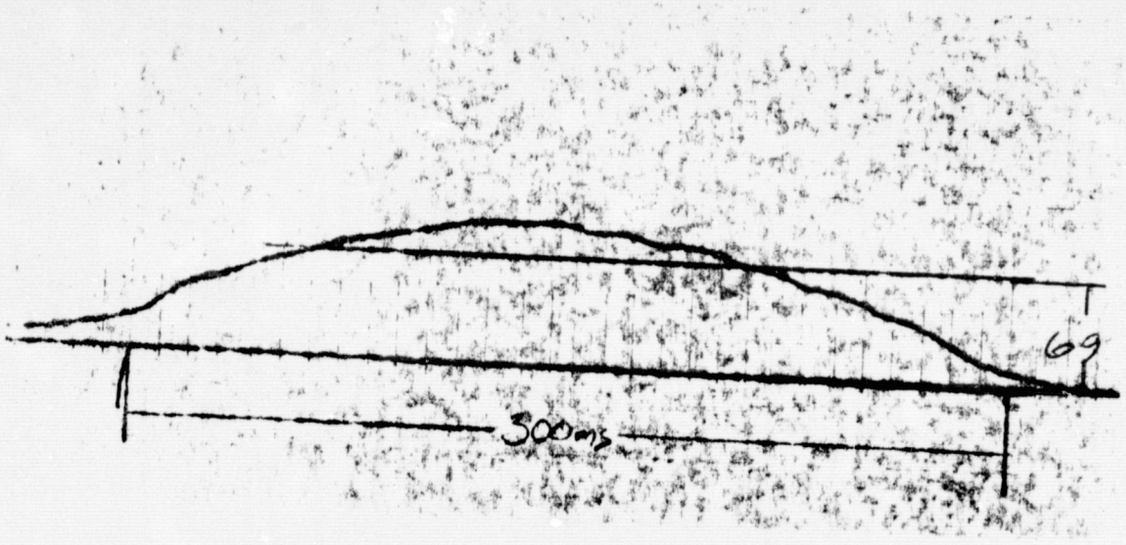
Z Axis, Unit No. 14, Mission 7-10, Impact 4



Parachute Deployment

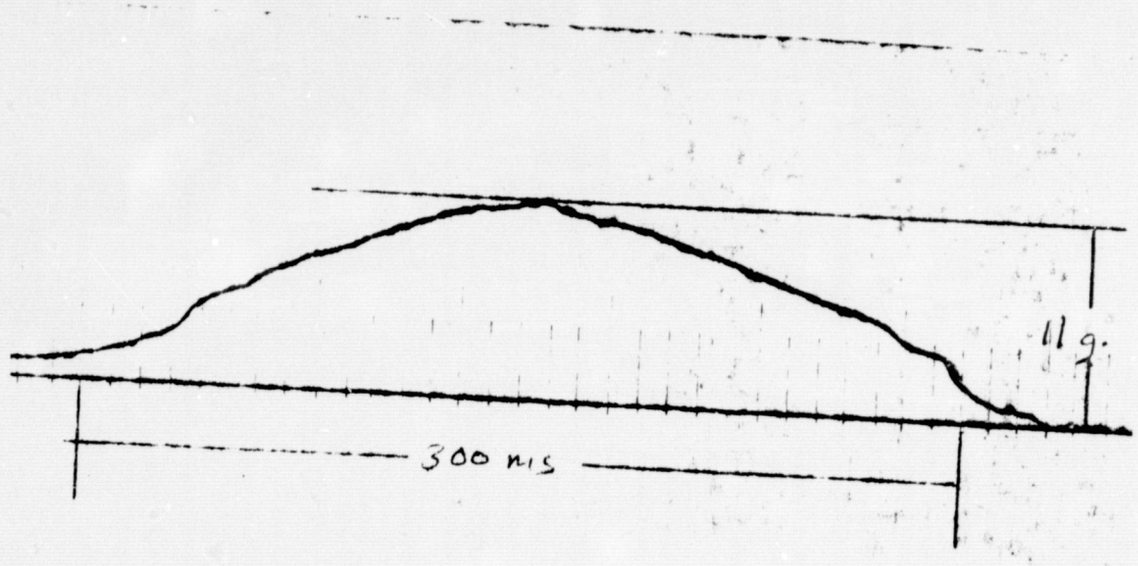
X-Axis, Units 9 & 10, Mission 1, Impact 2

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Parachute Deployment

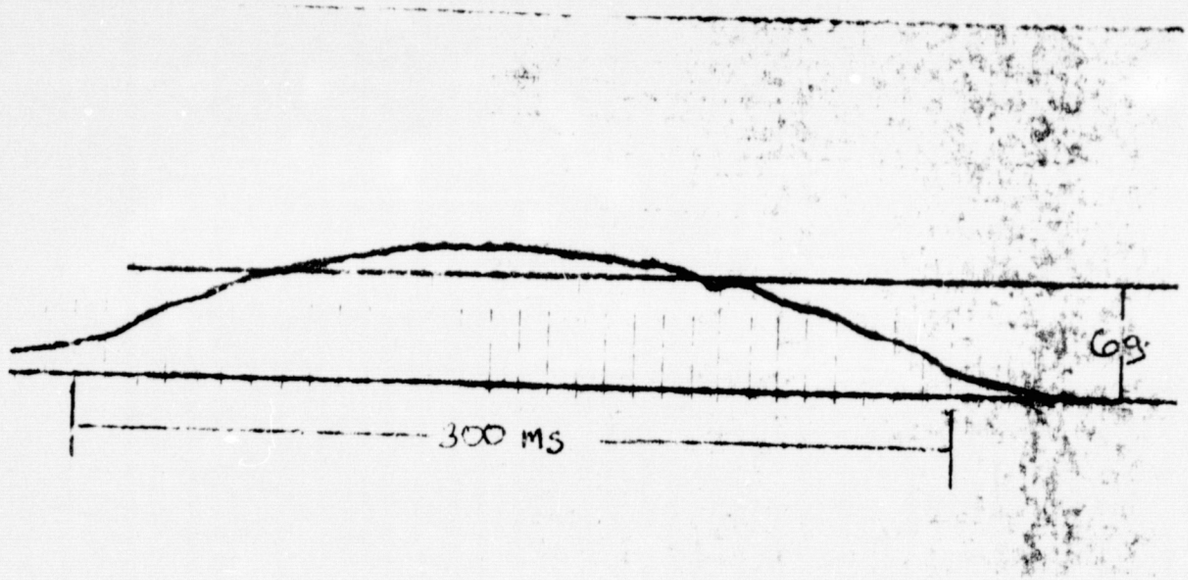
Z-Axis, Units 9 & 10, Mission 1, Impact 1



Parachute Deployment

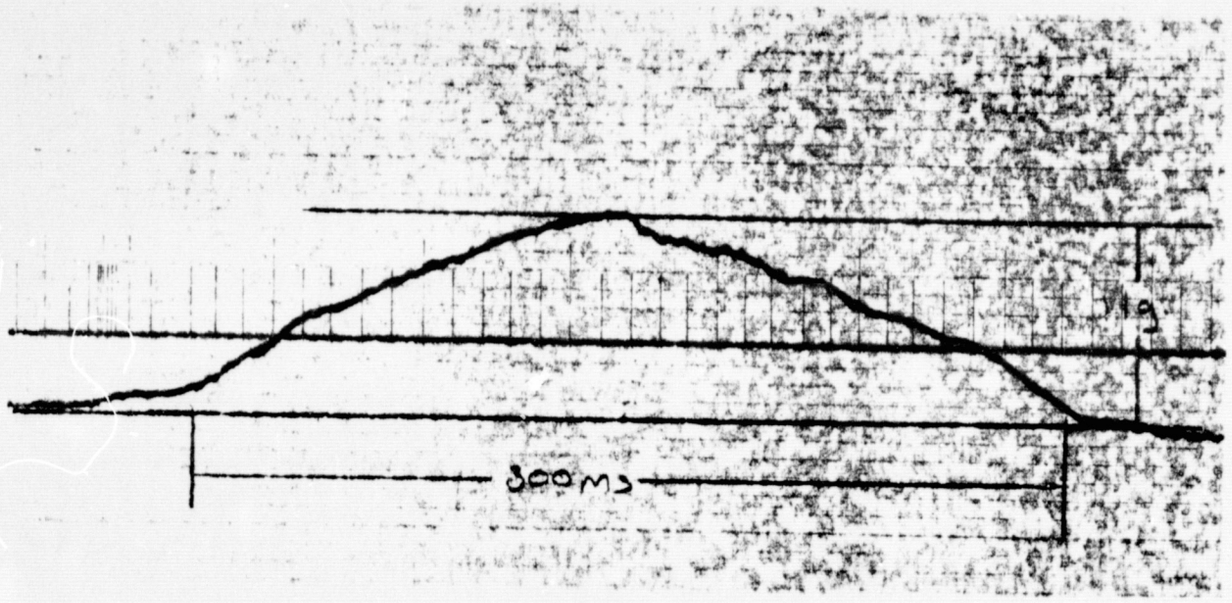
Y-Axis, Units 11, 12, 13, Mission 2, Impact 5

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Parachute Deployment

Z-Axis, Units 11, 12, 13, Mission 2, Impact 10



Parachute Deployment

X-Axis, Unit No. 14, Mission 3, Impact 8

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APPROVED ENGINEERING TEST LABORATORIES

SERVICE FOR:

Teledyne McCormick-Selph
3601 Union Road
Hollister, California 95023

PURCHASE ORDER NUMBER: 96064RR

I hereby certify that the preceding report is true and correct to the best of my knowledge.

APPROVED ENGINEERING TEST LABORATORIES

R. D. Short, Division Manager

G. D. Matteson, Project Engineer

Required PQA of listed items has been performed.

R. J. McKelligott,
Quality Assurance Manager

R. E. Young, Auth. Gov't Rep. 5-4-78
DCAS QAR
Contract No. NAS8-31973

mmc

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